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IN
GRADUATE EDUCATION

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A REPORT TO THE CARNEGIE CORPORATION OF NEW YORK

ON A TRAVELLING FELLOWSHIP 1957-58

BY

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SOME DILEMMAS IN GRADUATE EDUCATION

1. THE INVITATION AND THE ITINERARY.

IN THE LATE WINTER OF 1957, WHEN I WAS DEAN OF ARTS AND SCIENCES AT KANSAS STATE COLLEGE BUT HAD ACCEPTED APPOINTMENT THE FOLLOWING JULY 1, AS DEAN OF THE GRADUATE COLLEGE AND UNIVERSITY RESEARCH ADMINISTRATOR AT THE UNIVERSITY OF NEBRASKA, I RECEIVED AN INVITATION FROM THE CARNEGIE CORPORATION TO ACCEPT A TRAVELLING FELLOWSHIP TO VISIT A DIVERSE GROUP OF AMERICAN AND CANADIAN UNIVERSITIES AND THEIR GRADUATE SCHOOLS.

MY TRAVEL WAS COMPLETED IN MAY, 1958, AND THIS IS A SUMMATION OF MY IMPRESSIONS DRAWN FROM THE INSTITUTIONS VISITED. OBVIOUSLY THIS IS NOT A DEFINITIVE EXPOSITION OF WHAT I HAVE CHOSEN TO DESCRIBE AS THE DILEMMAS OF GRADUATE EDUCATION. RATHER, I HAVE ELECTED TO MAKE THIS AN INFORMAL STATEMENT, (ALMOST A CONVERSATION PIECE) OF THE THINKING, THE ATTITUDES, THE HOPES AND THE DESPAIRS OF UNIVERSITY ADMINISTRATORS AND FACULTY MEMBERS.

IN THE FOLLOWING PAGES I HAVE SET OUT A NUMBER OF PROBLEMS OF GRADUATE EDUCATION (BUT BY NO MEANS ALL!) AND SOME OF THE ANSWERS SOME OF THE

INSTITUTIONS HAVE EVOLVED. YOU WILL DISCOVER THAT MANY OF THE PROBLEMS WITH WHICH WE STRUGGLE DAY AFTER DAY PLAGUE OUR BRETHREN EVERYWHERE, LENDING CREDENCE TO THE OLD TRUISM THAT MISERY LOVES COMPANY.

A TOTAL OF NINE WEEKS AND APPROXIMATELY 14,000 MILES OF TRAVEL WAS DIVIDED INTO TWO SEGMENTS: ONE EXTENDING FROM NOVEMBER 25 TO DECEMBER 22, 1957, WHEN I TRAVELLED WESTWARD FROM LINCOLN TO THE PACIFIC COAST; THE OTHER FROM MARCH 29 TO MAY 2, 1958, WHEN I WENT SOUTH AND EAST. THE ITINERARY IS SHOWN IN APPENDIX A OF THIS REPORT. I VISITED TWENTY UNIVERSITIES, EIGHTEEN IN THE UNITED STATES AND TWO IN CANADA. IN ADDITION, MY TRAVEL SCHEDULE PERMITTED ME TO VISIT AT SOME LENGTH WITH THE PRESIDENT AND THE GRADUATE DEAN OF ONE MIDWESTERN UNIVERSITY AND THE GRADUATE DEANS OF TWO OTHER EASTERN INSTITUTIONS WHICH WERE NOT INCLUDED IN THE PREARRANGED ITINERARY.

THE SELECTION OF THE INSTITUTIONS, LEFT GENEROUSLY UP TO ME BY THE CORPORATION, WAS BASED ON A NUMBER OF CONSIDERATIONS. BECAUSE OF THE NATURE OF MY DUTIES AT THE UNIVERSITY OF NEBRASKA I RESTRICTED MY CHOICES FROM AMONG THOSE UNIVERSITIES THAT HAVE WELL-ESTABLISHED GRADUATE EDUCATION AND RESEARCH ACTIVITIES. MOREOVER, I ATTEMPTED TO INCLUDE INSTITUTIONS THAT WERE REPRESENTATIVE OF EACH OF THE MAJOR GEOGRAPHIC REGIONS OF THE TWO COUNTRIES INVOLVED: ONE LOCATED IN THE ROCKY MOUNTAIN COUNTRY, SIX ON THE PACIFIC COAST, FIVE IN THE SOUTH, ONE IN THE MIDDLE WEST, AND SIX IN THE NORTHEAST.¹ FURTHER, I DEEMED IT WISE TO COMPARE NOTES WITH

1. THE NUMBER IN THE MIDDLE WEST WAS PURPOSELY RESTRICTED BECAUSE OF PREVIOUS FAMILIARITY WITH THE UNIVERSITIES OF THIS REGION. INDIANA UNIVERSITY WAS SELECTED AS A SAMPLE BECAUSE IT HAPPENED TO BE THE ONLY WESTERN CONFERENCE CAMPUS I HAD NEVER PREVIOUSLY HAD OCCASION TO VISIT.

PERSONS ENGAGED IN THE OPERATIONS OF BOTH PUBLICLY AND PRIVATELY SUPPORTED SCHOOLS. AMONG THOSE VISITED, NINE MAY BE CLASSED AS PRIVATE, TEN AS PUBLIC, AND ONE (CORNELL) AS BOTH. FINALLY, SCHOOLS OF A WIDE VARIETY OF SIZES WERE VISITED, RANGING FROM THE COMPARATIVELY SMALL, SUCH AS RICE INSTITUTE AND THE CALIFORNIA INSTITUTE OF TECHNOLOGY, TO THE VERY LARGE, SUCH AS COLUMBIA UNIVERSITY, NEW YORK UNIVERSITY AND THE UNIVERSITY OF CALIFORNIA.

PRIOR CORRESPONDENCE ESTABLISHED A NUMBER OF BASIC CONTACTS AS WELL AS ACTUAL APPOINTMENTS AT THE SEVERAL INSTITUTIONS. MY VISIT ON EACH CAMPUS GENERALLY WAS OF TWO TO THREE DAYS DURATION. THERE WERE, OF COURSE, UNAVOIDABLE INSTANCES IN WHICH THE TIMES OF MY COMING UNFORTUNATELY CORRESPONDED WITH THE ABSENCE OF CERTAIN INDIVIDUALS WHOM I WISHED TO SEE. I WAS CORDIALLY RECEIVED EVERYWHERE.

I MET AND TALKED AT LEAST BRIEFLY WITH A VERY LARGE NUMBER OF PERSONS DURING THESE NINE WEEKS. I HELD INDIVIDUAL CONFERENCES OF SOME LENGTH AND WITH SPECIFIC RESULTS, AS RECORDED IN THE NOTEBOOKS I CARRIED, WITH NO FEWER THAN 129 PEOPLE. A LIST OF THESE INDIVIDUALS IS INCLUDED IN APPENDIX B. AS WILL BE NOTED, I MADE AN ATTEMPT TO SPEND SOME TIME ON VIRTUALLY EVERY CAMPUS WITH BOTH ADMINISTRATIVE AND FACULTY PERSONNEL CONCERNED WITH GRADUATE AND RESEARCH AFFAIRS. AT A MAJORITY OF THE INSTITUTIONS, BY VISITING WITH COLLEAGUES WHOM I HAVE KNOWN INTIMATELY OVER MANY YEARS, I FOUND IT FEASIBLE TO ELICIT PARTICULARLY CANDID APPRAISALS OF VARIOUS PROBLEMS AS SEEN FROM THE FACULTY POINT OF VIEW (NOT UNCOMMONLY AT SOME VARIANCE WITH THE ADMINISTRATIVE POINT OF VIEW!).

II. THE NATURE OF THE FINDINGS.

FROM THE OUTSET, I HAD IN MIND ASKING SEVERAL RATHER CLOSELY RELATED AND SPECIFIC QUESTIONS PERTAINING TO CERTAIN ASPECTS OF GRADUATE EDUCATION AND RESEARCH ADMINISTRATION. THESE QUERIES, ARISING LARGELY FROM PROBLEMS ALREADY RECOGNIZED AS CALLING FOR STUDY AND SOLUTION AT HOME, WERE ASKED REPEATEDLY IN ALL OF THE INSTITUTIONS VISITED. AS WAS TO BE ANTICIPATED, HOWEVER, MANY ADDITIONAL PROBLEMS OF HIGHER EDUCATION, RELATED TO THE BASIC FOCAL QUESTIONS, CAME UNDER DISCUSSION.

WHILE THERE WAS A CENTRAL AND COHESIVE CONSISTENCY IN MY QUESTIONING, I CERTAINLY CANNOT CLAIM THAT MY FINDINGS ARE BASED ON ANYTHING MORE THAN INCOMPLETE AND, OF NECESSITY, ESSENTIALLY RANDOM OBSERVATIONS. CLEARLY THEY ARE NOT AS EXHAUSTIVE AS ARE A NUMBER OF OTHER CURRENT ANALYSES WHICH DEAL WITH SOME OF THE SAME MATTERS WHICH I SOUGHT TO EXPLORE. NEITHER ARE MY SUMMATIONS STARTLINGLY NEW. I HAVE NO PAT SOLUTIONS TO THE MANY PROBLEMS WHICH FACE OUR NATIONAL ACADEMIC COMMUNITY IN THE AREAS OF GRADUATE EDUCATION AND RESEARCH.

ON THE OTHER HAND, I DO SENSE A VARIETY OF BARNACLE-ENCRUSTED TRADITIONS OR PRESUMPTIONS THAT CALL FOR THOUGHTFUL RE-EVALUATION. PATENTLY

WE FACE THE CHALLENGE OF EVOLVING CIRCUMSTANCE; OF FUNDAMENTAL CHANGE IN THE BASIC NATURE AND DEMANDS OF THE ENVIRONMENT WHICH WE SERVE AND IN WHICH WE LABOR. MUCH THAT HAS BEEN ADEQUATE IN THE PAST SEEMS LIKELY TO BE FOUND NO LONGER DESIRABLE, OR EVEN POSSIBLE, IN THE FUTURE. NEW GOALS EMERGE AND CLEARLY WE ARE IN NEED OF ADVANCED LEVELS OF UNDERSTANDING AND MORE ACCURATE INSTRUMENTS OF MEASUREMENT AND DIRECTION IF WE ARE TO FIND OUR WAY EFFECTIVELY FORWARD.

III. THE INDIVIDUALITY OF THE AMERICAN UNIVERSITY.

THE TOUR LEFT ME WITH ONE DOMINANT IMPRESSION--THE ESSENTIAL UNIQUENESS OF THE INDIVIDUAL INSTITUTIONS. THIS DISCOURAGES GENERALIZATION. EACH UNIVERSITY HAS EVOLVED ITS OWN PECULIAR PERSONALITY, DEVELOPED BY CIRCUMSTANCES WHICH ARE UNIQUE IN PLACE AND TIME, AND BY THE DISTINCTIVE IMPRINT OF THE MEN, OR GROUPS OF MEN, WHO SHAPED THE TRADITIONS, THE POINTS OF VIEW, THE GOALS, AND THE METHODS.

INDEED, ONE OF THE GREAT STRENGTHS OF AMERICAN HIGHER EDUCATION SURELY STEMS FROM THE DIVERSE CHARACTER AND BEHAVIOR OF THE INSTITUTIONS THAT COMPRISE THE SYSTEM. IT IS TO BE HOPED THAT EFFORTS TO ROUTINIZE OR STANDARDIZE THIS DIVERSITY WILL NEVER SUCCEED.

AS ONE TRAVELS AMONG THE UNIVERSITIES ONE FINDS THAT CERTAIN COMMON PROBLEMS AND ASPIRATIONS REVEAL THEMSELVES WITH ALMOST MONOTONOUS REGULARITY. GENERALLY APPLICABLE SOLUTIONS ARE MUCH HARDER TO COME BY. INDEED, ONE COMES TO BELIEVE IT DANGEROUS TO ASSUME THAT A SEEMINGLY SATISFACTORY SOLUTION, HAMMERED OUT WITHIN THE PERSONALITY OF ONE INSTITUTION, IS WISE OR WORKABLE IN ANOTHER. INsofar AS COMMON DENOMINATORS AMONG INSTITUTIONS CAN BE FOUND, THEY APPEAR TO GROUP THEMSELVES MORE ON THE BASIS OF OPERATIONAL SIZE, PRIVATE OR PUBLIC SUPPORT, OVERALL FINANCIAL STRENGTH, DEFINED

EXTENT OF MISSION, OR STAGE OF ACADEMIC MATURITY, THAN BY GEOGRAPHIC REGIONS.

IN ANY EVENT, I AM PERSUADED WE STAND TO ACHIEVE MORE BY SUSTAINING THIS VERY DIVERSE APPROACH TO THE PROBLEMS OF HIGHER EDUCATION. FOR HEREIN LIES A BASIC LABORATORY RESOURCE OF INESTIMABLE VALUE WHICH CAN YIELD MUCH TO ACCOMPLISH OUR COMMON OBJECTIVES. THE ACADEMIC SEA WOULD SOON BE FISHED OUT IF ONLY ONE, OR JUST A FEW IDEAS WERE PERMITTED TO SWIM IN ITS TURBULENT WATERS.

IV. THE GRADUATE FACULTY.

IN ALL OF THE INSTITUTIONS VISITED I EXAMINED IN SOME DETAIL THE BASIC ORGANIZATIONAL STRUCTURE OF THE GRADUATE SCHOOL. I TOOK COMPARATIVE TESTIMONY ON SUCH MATTERS AS THE RESPONSIBILITIES AND INFLUENCE OF THE GRADUATE DEAN, THE NATURE AND FUNCTIONS OF THE GRADUATE COUNCIL AND THE MANNER OF ITS SELECTION, AND THE CHARACTER OF THE RELATIONSHIP OF THE GRADUATE SCHOOL WITH THE DEPARTMENTS OFFERING GRADUATE WORK, AND WITH THE OTHER COLLEGES AND SCHOOLS OF THE UNIVERSITY. WHILE I FOUND A GREAT VARIETY OF PATTERNS OF PROCEDURES AND MANY INTERESTING DIVERGENCES OF OPINION AMONG THE FUNDAMENTAL PHILOSOPHIES THAT LIE BEHIND THEM, I WOULD LIKE TO CONFINE THIS PART OF MY REPORT TO THE CRITICALLY SIGNIFICANT MATTER OF A GRADUATE FACULTY AND THE GROUND RULES OF ITS SELECTION.

GRADUATE EDUCATION IS, OF COURSE, NOT ONLY OUR MOST ADVANCED LEVEL OF INSTRUCTION, BUT FOR STUDENT AND STAFF MEMBER ALIKE THE MOST PERSONAL AND INDIVIDUALIZED LEARNING RELATIONSHIP OF A UNIVERSITY. THIS IS THE REALM IN WHICH THE INSTITUTION ATTEMPTS TO BRING INTO BEING AN ACADEMIC ATMOSPHERE IN WHICH EVEN THE BEST IS NOT REGARDED AS BEING QUITE GOOD ENOUGH. IT IS HERE THAT WE SEEK TO INFECT YOUNG MINDS WITH THE RESEARCH VIRUS OF INTELLECTUAL DISCONTENT, HOPING THAT THENCEFORWARD THEY WILL BE

EVER CURIOUS, DISTRUSTFUL OF DOGMA AND SEEMINGLY ESTABLISHED FACT, CONSTANTLY PROBING, AND CREATIVE. OF NECESSITY THIS IS A JOB FOR THE BEST IN STAFF THAT A UNIVERSITY CAN MUSTER, FOR THE QUALITY OF ANY PROGRAM IN GRADUATE EDUCATION CAN BE NO BETTER THAN THE FACULTY INVOLVED IN IT. HOW THEN DOES A UNIVERSITY PROCEED TO ASSURE ITSELF THAT GRADUATE INSTRUCTION IS IN TRULY COMPETENT HANDS?

I FOUND THAT IN THE CASE OF TEN (EXACTLY HALF) OF THE INSTITUTIONS VISITED, THERE IS NO OFFICIALLY DESIGNATED GRADUATE FACULTY, NOR DOES IT MEET AS A SEPARATELY RECOGNIZED SEGMENT OF THE GENERAL FACULTY.² IN THESE INSTANCES, THE FUNDAMENTAL POLICIES OF GRADUATE EDUCATION ARE ESTABLISHED BY THE GENERAL UNIVERSITY FACULTY AND THE GRADUATE COUNCIL IS REPRESENTATIVE OF IT AND RESPONSIVE TO ITS ACTIONS.³ IN GENERAL, ALL PERSONS ON THE REGULAR ACADEMIC STAFF ARE ELIGIBLE TO TEACH COURSES CARRYING GRADUATE CREDIT AND TO SERVE AS ADVISERS AND AS MEMBERS OF PROGRAM-ESTABLISHING, THESIS-READING AND EXAMINING COMMITTEES FOR INDIVIDUAL GRADUATE STUDENTS. THE ACTUAL ASSIGNMENT OF STAFF MEMBERS TO THE PERFORMANCE OF THESE DUTIES IS LARGELY A MATTER OF THE CHOICE OF THE DEPARTMENTS INVOLVED, SUBJECT IN VARYING DEGREES TO REVIEW BY THE GRADUATE COUNCIL AND/OR THE GRADUATE DEAN. THE BASIC A PRIORI ASSUMPTION IN THESE INSTITUTIONS IS, HOWEVER, THAT CAREFUL INITIAL APPOINTMENT IS A GENERALLY SUFFICIENT SAFEGUARD TO THE QUALITY OF THE SPECIFIC FACULTY MEMBERS ENGAGED IN GRADUATE

2. THIS SITUATION APPEARED TO EXIST AT UTAH, CALIFORNIA, U.C.L.A., CALIFORNIA INSTITUTE OF TECHNOLOGY, STANFORD, OREGON, BRITISH COLUMBIA, RICE, MASSACHUSETTS INSTITUTE OF TECHNOLOGY, AND YALE.

3. THE GENERAL FACULTY BODY INVOLVED IS IN MOST INSTANCES COMPOSED OF ALL PERSONS HOLDING THE RANK OF ASSISTANT PROFESSOR OR ABOVE, ALTHOUGH IN SOME CASES REGULARLY APPOINTED FULL-TIME INSTRUCTORS ARE INCLUDED ALSO.

TEACHING. NO RIGOROUS POST-APPOINTMENT SCRUTINY OF CREDENTIALS IS UNDERTAKEN TO DETERMINE A FACULTY MEMBER'S SPECIFIC QUALIFICATION FOR THE DIRECTION OF GRADUATE WORK.⁴

AT THE OTHER TEN INSTITUTIONS VISITED, A GRADUATE FACULTY EXISTS AS A DESIGNATED SEGMENT OF THE TOTAL FACULTY, AND IN ALL BUT ONE OR TWO INSTANCES THIS BODY MEETS AS SUCH WITH SOME MEASURE OF REGULARITY.⁵ THE GRADUATE COUNCIL IS REPRESENTATIVE OF AND RESPONSIBLE TO THE GRADUATE FACULTY, AND THE FACULTY FORMULATES THE BASIC POLICIES OF GRADUATE EDUCATION OF THE INSTITUTION. SELECTION OF THESE GRADUATE FACULTIES (WITH MEMBERSHIP GENERALLY CARRYING ASSOCIATED PRIVILEGES AND OBLIGATIONS OF PARTICIPATION IN GRADUATE WORK) IS SIGNIFICANTLY VARIABLE, RANGING FROM THE LOOSELY PERMISSIVE TO THE TIGHTLY RESTRICTIVE.

AT THE PERMISSIVE END OF THE CONTINUUM ONE FINDS A UNIVERSITY SUCH AS CORNELL, WHERE IN EFFECT THE GRADUATE FACULTY IS FREELY SELECTED BY THE GRADUATE STUDENTS. HERE, IN A SYSTEM WHICH IS NO MORE THAN A VARIANT IN CUSTOM OF THE PHILOSOPHY THAT VIRTUALLY ANYONE APPOINTED TO THE FACULTY IS COMPETENT TO HANDLE GRADUATE WORK, THE RULES PROVIDE THAT A GRADUATE STUDENT IS AT LIBERTY TO CHOOSE HIS OWN ADVISER AND PROGRAM COMMITTEE FROM AMONG ANY OF THE STAFF IN HIS FIELDS OF INTEREST WHO HOLD FULL-TIME APPOINTMENTS IN TEACHING AND/OR RESEARCH. IF A FACULTY MEMBER IS SELECTED

4. U.C.L.A. AND THE UNIVERSITY OF OREGON ARE TO SOME EXTENT EXCEPTIONS TO THIS STATEMENT. IN BOTH INSTANCES THE GRADUATE DEAN AND THE GRADUATE COUNCIL DO UNDERTAKE, IN A MEASURE WHICH SEEMS TO EXCEED THAT IN THE OTHER CASES, TO GIVE SUBSTANTIAL REVIEW TO THE BACKGROUND OF THOSE PERSONS RECOMMENDED BY INDIVIDUAL DEPARTMENTS FOR PARTICIPATION IN VARIOUS PHASES OF GRADUATE EDUCATION.

5. THIS GROUP INCLUDES WASHINGTON, TEXAS, TULANE, INDIANA, TORONTO, CORNELL, COLUMBIA, NEW YORK, DUKE AND NORTH CAROLINA.

FOR SUCH DUTY BY A STUDENT, HE AUTOMATICALLY BECOMES A MEMBER OF THE GRADUATE FACULTY. AT INDIANA UNIVERSITY, WHERE MEMBERSHIP COMES ON RECOMMENDATION BY DEPARTMENTS AND ULTIMATE APPOINTMENT BY THE DEAN, NO HIGHLY RESTRICTIVE CRITERIA OF SELECTION ARE APPLIED. IN THIS SITUATION, SOME 90 PER CENT OF THE STAFF IN THOSE AREAS WHERE POST-BACCALAUREATE WORK FALLS UNDER THE JURISDICTION OF THE GRADUATE SCHOOL IS INCLUDED IN THE GRADUATE FACULTY.

IN SHARP CONTRAST, ONE FINDS INSTITUTIONS LIKE THE UNIVERSITY OF TEXAS WHERE IT IS ESTIMATED THAT NOT MORE THAN 20 PER CENT OF THE TOTAL ACADEMIC STAFF HOLDS MEMBERSHIP ON THE GRADUATE FACULTY. HERE A GRADUATE FACULTY MEMBERSHIP COMMITTEE RIGOROUSLY SCREENS THE CREDENTIALS OF PERSONS NOMINATED, GIVING PARTICULAR ATTENTION TO THE TRAINING, EXPERIENCE AND CREATIVE SCHOLARLY PRODUCTIVITY OF EACH INDIVIDUAL. TEXAS ADHERES TO THE PHILOSOPHY THAT GRADUATE DEGREES, PARTICULARLY AT THE PH.D. LEVEL, ARE RESEARCH DEGREES AND THAT ONLY PERSONS WHO DEMONSTRATE RESEARCH COMPETENCE ARE CAPABLE OF GIVING ADEQUATE GUIDANCE TO GRADUATE STUDENTS. SHARP LINES OF DISCRIMINATION, THEREFORE, ARE DRAWN AND APPLIED. IN THE TEXAS ARRANGEMENT THE RECOMMENDATIONS OF THE MEMBERSHIP COMMITTEE ARE GIVEN ADDITIONAL REVIEW BY BOTH THE GRADUATE COUNCIL AND THE GRADUATE DEAN BEFORE FINAL APPOINTMENTS ARE MADE.⁶

IN INTERMEDIATE POSITION IN THIS SCALE ARE SUCH INSTITUTIONS AS WASHINGTON, NEW YORK AND TULANE, WHERE THE GRADUATE FACULTY IS CONCEIVED

6. IT MIGHT BE ADDED THAT THE JUDGMENTS BROUGHT TO BEAR IN THE SELECTION OF STAFF MEMBERS FOR THE GRADUATE FACULTY ARE TAKEN SERIOUSLY ENOUGH THAT APPOINTMENT OR FAILURE TO GAIN APPOINTMENT BECOMES A FACTOR IN THE CONSIDERATION GIVEN INDIVIDUALS FOR PROMOTION AND SALARY INCREASES.

NEITHER AS BEING A SMALL ELITE BODY, ON THE ONE HAND, NOR AS A LOOSELY DEFINED GROUP NEARLY COINCIDENT WITH THE TOTAL FACULTY, ON THE OTHER. AT THESE INSTITUTIONS, ON THE SOLE AUTHORITY OF THE GRADUATE DEAN, OR BY ACTION OF THE DEAN SUBSEQUENT TO REVIEW AND RECOMMENDATIONS OF THE GRADUATE COUNCIL ACTING AS A MEMBERSHIP COMMITTEE, APPOINTMENTS ARE MADE IN NUMBERS WHICH APPROXIMATE HALF OF THE MEMBERSHIP OF THE GENERAL FACULTY.

THERE IS, OBVIOUSLY, MUCH DISCUSSION, SOME OF IT HARDLY DISPASSIONATE, FOR AND AGAINST THESE VARIOUS APPROACHES TO SELECTING GRADUATE FACULTIES. TO BRING THIS DEBATE INTO SHARP FOCUS THE EXTREMES ARE SET FORTH HERE.

1.

A. WHEN A MAN IS APPOINTED TO THE STAFF OF A UNIVERSITY, THE FACULTY AND ADMINISTRATION HAVE HAD (OR SHOULD HAVE HAD) ADEQUATE OPPORTUNITY TO JUDGE AND PASS ON HIS QUALITY AS A SCHOLAR. IF CONFIDENCE IN THE MAN JUSTIFIES HIS APPOINTMENT IN THE FIRST PLACE, HE SHOULD BE ACCEPTED AS CAPABLE OF HANDLING ANY OF THE ACADEMIC ACTIVITIES OF THE UNIVERSITY IN HIS AREA OF SPECIALIZATION, INCLUDING GRADUATE INSTRUCTION. AT BEST, THE JUDGMENT OF A GRADUATE DEAN, A GRADUATE COUNCIL, OR A GRADUATE FACULTY MEMBERSHIP COMMITTEE WILL, OF NECESSITY, NOT BE AS ADEQUATE A PROFESSIONAL EVALUATION AS CAN BE RENDERED BY HIS OWN DEPARTMENT.

B. IT IS TRUE THAT CAREFULLY DISCRIMINATING PRACTICES SHOULD BE FOLLOWED IN THE ORIGINAL SELECTION OF STAFFS, BUT MANY PEOPLE ASSUME AN ALTERED APPEARANCE IN THE YEARS FOLLOWING THEIR APPOINTMENT. MANY YOUNG PEOPLE FAIL TO LIVE UP TO THEIR ORIGINAL PROMISE. NOT INFREQUENTLY, MATURE INDIVIDUALS WHO "LOOK STRONG" WHEN HIRED, GO INTO UNEXPECTED INTELLECTUAL RETIREMENT. FURTHERMORE, ALMOST ANY INSTITUTION, BUT PARTICULARLY

THE LARGER ONES, MUST RECRUIT STAFF DESIGNED PRIMARILY TO HANDLE THE MASSIVE INTRODUCTORY, UNDERGRADUATE INSTRUCTIONAL LOAD. MANY SUCH PERSONS, THOUGH FULLY COMPETENT FOR THEIR BASIC ASSIGNMENT, CLEARLY DO NOT HAVE THE BACKGROUND OR EXPERIENCE TO TEACH AT THE GRADUATE LEVEL, AND THE NUMBERS OF THESE INDIVIDUALS WILL SURELY INCREASE ON MOST CAMPUSES IN THE INORDINATELY COMPETITIVE SITUATION AMONG INSTITUTIONS WHICH HAS BEEN CREATED BY ACUTE SHORTAGES OF WELL-TRAINED PEOPLE. AND, TO BE SURE, THE LOWER A GIVEN UNIVERSITY RANKS NATIONALLY IN SALARY SCALES, THE MORE DIFFICULTY IT WILL EXPERIENCE IN THIS TIGHT MARKET FOR TALENT.

ALL OF THESE CIRCUMSTANCES LEAD TO THE BUILD-UP WITHIN A GENERAL FACULTY OF WHAT BY SOME IS TERMED A "SEGMENT OF MEDIOCRITY" OR A "BACKLOG OF INADEQUACY," AT LEAST SO FAR AS GRADUATE WORK IS CONCERNED. SEVERAL OF THE INSTITUTIONS VISITED ESTIMATED THAT THE ACTIVE RESEARCH AND CREATIVE SCHOLARSHIP OF THE UNIVERSITY WAS BEING CARRIED FORWARD BY NO MORE THAN 40 PER CENT OF THE TOTAL FACULTY. THUS, IT IS ARGUED, THAT IT IS ONLY BEING REALISTIC TO RECOGNIZE THAT A SELECTIVELY ESTABLISHED GRADUATE FACULTY IS PREREQUISITE IF A DEFENSIBLE QUALITY OF INSTRUCTION IS TO BE MAINTAINED. PERHAPS, IT IS CONCEDED, IN A COMPARATIVELY SMALL, FINANCIALLY STRONG INSTITUTION WITH A HIGHLY RESTRICTED MISSION, LIKE THE CALIFORNIA INSTITUTE OF TECHNOLOGY, IT CAN BE MAINTAINED SUCCESSFULLY THAT ALL FACULTY IS OF GRADUATE QUALITY, BUT SURELY THIS IS HARDLY POSSIBLE IN A LARGE, COMPLETE UNIVERSITY WITH ITS MULTIFARIOUS CONCERNS.

2.

A. GIVEN THE IDEA THAT A UNIVERSITY IS A COMMUNITY OF SCHOLARS, THE LESS QUALITATIVE JUDGMENT OF COLLEAGUE BY COLLEAGUE THAT IS CALLED FOR,

THE LESS ANTAGONISM AND TENSION THERE WILL BE. SCHOLARSHIP THRIVES BEST IN AN ATMOSPHERE OF PERSONAL HARMONY, AND THE PRICE OF FRICTION IS TOO HIGH TO PAY FOR THE VALUES PRESUMED TO DERIVE FROM THE DESIGNATION OF QUALITY DIFFERENCES AMONG FACULTY PEOPLE.

B. OF COURSE, QUALITY DISTINCTIONS AMONG STAFF MEMBERS ARE SUBJECTIVE, AND WHEN MADE MAY LEAD TO UNHAPPINESS AND EVEN BITTERNESS. HOWEVER PAINFUL THESE ACTIONS, ARE THEY NOT A PART OF LIFE IN ALL ITS ASPECTS, AND VITALLY NECESSARY IF A UNIVERSITY IS TO ACCOMPLISH ITS MISSION? SUCH JUDGMENTS CANNOT BE AVOIDED IN ANY EVENT, SINCE EACH YEAR THE FACULTY ROSTER IS STUDIED WITH REFERENCE TO PROMOTIONS AND SALARY ADVANCES.

3.

A. THE PRACTICE OF PUTTING AN ALL-UNIVERSITY PERSON, AND/OR COMMITTEE OF PERSONS, IN SEATS OF AUTHORITATIVE, FINAL JUDGMENT CONCERNING THE SCHOLARLY QUALITY OF FACULTY ENGAGED IN THE WHOLE GAMUT OF ACADEMIC ENDEAVOR, IS IN THE FIRST PLACE ASKING THE IMPOSSIBLE, AND IN THE SECOND PLACE HELPING TO SET IN MOTION THOSE REVOLUTIONARY REACTIONS THAT ULTIMATELY DISSOLVE THE ORGANIZATION OF A UNIFIED GRADUATE SCHOOL. THE PROFESSIONAL COLLEGES ARE PARTICULARLY RESTIVE ABOUT HAVING THE QUALITY OF THEIR STAFF PEOPLE MEASURED BY THE SAME, LONG-ESTABLISHED STANDARDS THAT ARE FELT TO EMANATE PRINCIPALLY FROM THE BASIC ARTS AND SCIENCE DEPARTMENTS. THEY ARE JEALOUS OF THEIR RIGHT TO DETERMINE DEFENSIBLE STANDARDS AND DEGREE DEFINITIONS IN THEIR OWN FIELDS WHICH THEY SEE AS BEING ACADEMICALLY UNIQUE, AND WHICH THEY FEEL THEY KNOW MORE ABOUT THAN ANYONE ELSE.

B. THE ADMINISTRATIVE SEPARATION OF THE GRADUATE PROGRAM INTO SEVERAL AUTONOMOUS SEGMENTS IN THE FINAL ANALYSIS DOES NO MORE THAN REMOVE THE

ALL-UNIVERSITY CONCERN FOR STANDARDS FROM THE HANDS OF THE GRADUATE COLLEGE, WHERE IT WOULD SEEM LOGICALLY TO BELONG, TO THE ALREADY OVERBURDENED HANDS OF THE PRESIDENT AND HIS GOVERNING BOARD. SOMEONE, OR SOME GROUP, SOMEWHERE, MUST BE SUPPORTED IN ACHIEVING THE ULTIMATE INSIGHT TO ESTABLISH, AND BE GIVEN THE FINAL AUTHORITY OF GUARDIANSHIP FOR, THE LEVELS OF EXCELLENCE WHICH THE FACULTY, WITH NO SINGLE ACADEMIC ADMINISTRATIVE SEGMENT THEREOF HAVING UNFAIR RIGHT OF DOMINANCE IN BEHALF OF ITS POINT OF VIEW, CAN ACCEPT AS BEING MINIMAL FOR THE TOTAL UNIVERSITY.

V. OFF-CAMPUS GRADUATE EDUCATION.

THE DOZEN YEARS FOLLOWING WORLD WAR II WITNESSED A RAPID INCREASE IN THE NUMBER OF COLLEGE TRAINED SCIENTIFIC AND TECHNICAL PERSONNEL IN GOVERNMENT AND INDUSTRY. THESE INDIVIDUALS INCLUDE MANY WHO WANT MORE EDUCATION GENERALLY AT THE GRADUATE LEVEL TO IMPROVE THEIR PROFESSIONAL COMPETENCE. IN OBVIOUS SELF-INTEREST, THE EMPLOYERS ARE SUPPORTING FURTHER EDUCATION FOR AT LEAST PART OF THEIR PROFESSIONAL STAFFS. MANY TIMES, THE PROFESSIONAL STAFFS ARE LOCATED AT SUBSTANTIAL DISTANCES FROM A UNIVERSITY WITH A WELL-DEVELOPED GRADUATE PROGRAM. THERE IS ANOTHER PROBLEM. MANY OF THE EMPLOYEES ARE MATURE PERSONS, CARRYING THE FINANCIAL RESPONSIBILITIES OF FAMILIES, AND UNABLE FOR ECONOMIC AND OTHER REASONS TO LEAVE THEIR POSITIONS TO UNDERTAKE FULL TIME RESIDENT COLLEGE INSTRUCTION.

IN RESPONSE TO THESE CIRCUMSTANCES, PRESSURES HAVE BEEN BROUGHT TO BEAR ON OUR INSTITUTIONS OF HIGHER EDUCATION TO ESTABLISH OFF-CAMPUS CENTERS OFFERING GRADUATE PROGRAMS. THE NEEDS OF THESE PEOPLE, HOWEVER, USUALLY CANNOT BE MET BY THE SCATTERED INDIVIDUAL COURSES WHICH ARE OFFERED BY UNIVERSITY EXTENSION DIVISIONS. THE DEMAND IS FOR ON-THE-SITE COORDINATED SEQUENCES OF CLASS WORK BY WHICH FULLY-EMPLOYED PEOPLE, ON A PART-TIME

STUDENT BASIS COULD EVENTUALLY SECURE GRADUATE DEGREES AT THE MASTERS LEVEL.⁷ IT IS EVIDENT THAT GOVERNMENT AND INDUSTRY ARE VERY SINCERE ABOUT THIS. BOTH HAVE INDICATED WILLINGNESS TO ASSUME THE FULL COSTS OF BRINGING SUCH GRADUATE CENTERS INTO BEING, IF THE UNIVERSITIES WILL PROVIDE THE PERSONNEL AND CURRICULA.

REQUESTS OF THIS TYPE HAVE MET WITH A GREAT VARIETY OF RESPONSES. GRADUATE EDUCATION IS ALMOST CERTAINLY VIEWED BY ITS PRACTITIONERS WITH A GREATER MEASURE OF CONSERVATISM THAN ANY OTHER BRANCH OF OUR ENTIRE ACADEMIC ENTERPRISE. IN MANY INSTITUTIONS, INDEED IN A STRONG MAJORITY OF THEM, THE SUGGESTION OF OFF-CAMPUS ADVANCED DEGREE PROGRAMS WAS MET WITH STERN DISAPPROVAL AND ADAMANT REFUSAL. IN A SUBSTANTIAL NUMBER OF UNIVERSITIES, HOWEVER, OFF-CAMPUS GRADUATE WORK WAS ACCEPTED. IT IS GIVEN IN SEVERAL WAYS.

OF THE TWENTY INSTITUTIONS VISITED, FOURTEEN ARE NOT PRESENTLY ENGAGED IN EITHER PARTIAL OR COMPLETE GRADUATE PROGRAMS AWAY FROM THE MAIN CAMPUS OF THE UNIVERSITY.⁸ IN A FEW INSTANCES AMONG THESE SCHOOLS OCCASIONAL EXTENSION DIVISION COURSES ARE OFFERED AT OUTLYING POINTS, THE ACADEMIC CREDIT FOR WHICH CAN BE UTILIZED IN VARIOUSLY RESTRICTED AND COMPARATIVELY SMALL TOTALS IN A REGULARLY PURSUED RESIDENCE DEGREE PROGRAM. MOST OF THEM, HOWEVER, STEADFASTLY DECLINE TO PROVIDE GRADUATE WORK OF ANY SORT AWAY FROM THE CAMPUS OF THE UNIVERSITY. THE SIX REMAINING INSTITUTIONS HAVE ESTABLISHED SOME TYPE OF COORDINATED OFFERINGS LEADING TOWARD,

7. TO THE BEST OF MY KNOWLEDGE NO ONE HAS SERIOUSLY CONSIDERED ACTIVITY OF THIS SORT AT THE LEVEL OF THE PH.D.

8. THESE INCLUDE: CALIFORNIA INSTITUTE OF TECHNOLOGY, STANFORD, OREGON, BRITISH COLUMBIA, TEXAS, RICE, TULANE, INDIANA, TORONTO, MASSACHUSETTS INSTITUTE OF TECHNOLOGY, YALE, COLUMBIA, DUKE AND NORTH CAROLINA.

OR EVEN TO, MASTERS DEGREES AT OFF-CAMPUS GOVERNMENT OR INDUSTRIAL INSTALLATIONS.⁹ IN ADDITION, CONFERENCES ON THIS GENERAL POINT PROVIDED A VARIETY OF SECONDHAND INFORMATION CONCERNING SIMILAR ARRANGEMENTS MADE BY A NUMBER OF OTHER INSTITUTIONS NOT INCLUDED IN THE ITINERARY.¹⁰

THE MOST EXTENSIVE AND ELABORATE INVOLVEMENT IN OFF-CAMPUS MASTERS DEGREE PROGRAMS WAS AT THE UNIVERSITY OF CALIFORNIA AT LOS ANGELES. A BRIEFLY SUMMARIZED STATEMENT DESCRIBING ONE OF THE SPECIFIC PROGRAMS REVEALS THE BASIC CHARACTER OF A FULL-BLOWN DEVELOPMENT. THE FIRST PLAN DEvised AT U.C.L.A., AND THE ONE THAT HAS SINCE SERVED AS A MODEL FOR LATER EFFORTS BY THIS INSTITUTION IN OTHER PLACES, CAME IMMEDIATELY AFTER THE WAR IN RESPONSE TO AN URGENTLY EXPRESSED NEED FROM THE NAVAL ORDINANCE TEST STATION LOCATED AT CHINA LAKE, ABOUT 155 MILES FROM THE LOS ANGELES CAMPUS. WHEN THE ORIGINAL REQUEST WAS MADE BY THE NAVY, THERE WERE SOME 20,000 PEOPLE STATIONED AT THE CHINA LAKE BASE, OF WHOM 2,000 TO 2,500 WERE JUDGED TO HAVE THE PROFESSIONAL BACKGROUND AND INTELLECTUAL CAPACITY TO UNDERTAKE GRADUATE WORK. AS IS TYPICAL IN A LARGE PROPORTION OF THE

9. WORK OF THIS TYPE HAS BEEN ESTABLISHED BY: THE UNIVERSITY OF UTAH AT THE DOUGWAY PROVING GROUND ABOUT 90 MILES FROM SALT LAKE CITY; THE UNIVERSITY OF CALIFORNIA AT LOS ANGELES AT SUCH NAVY INSTALLATIONS AS THOSE AT CHINA LAKE AND POINT MUGU, AS WELL AS AT INDUSTRIAL CENTERS IN SAN DIEGO, ONTARIO, RIVERSIDE AND OTHERS; THE UNIVERSITY OF CALIFORNIA AT BERKELEY AT THE RADIATION LABORATORIES IN LIVERMORE; THE UNIVERSITY OF WASHINGTON AT THE GENERAL ELECTRIC-ATOMIC ENERGY COMMISSION HANFORD PLANT AT RICHLAND; CORNELL UNIVERSITY FOR WESTINGHOUSE IN ELMIRA AND IN ASSOCIATION WITH THE UNIVERSITY SUPERVISED AERONAUTICAL RESEARCH LABORATORIES IN BUFFALO; AND NEW YORK UNIVERSITY AT THE BELL LABORATORIES IN MURRAY HILL, NEW JERSEY.

10. SOMETHING WAS LEARNED, FOR EXAMPLE, ABOUT: THE GRADUATE CENTER WHICH THE RENSSELAER POLYTECHNIC INSTITUTE OPERATES FOR UNITED AIRCRAFT AT EAST HARTFORD, CONNECTICUT; THE WORK OF THE UNIVERSITY OF MICHIGAN AND MICHIGAN STATE UNIVERSITY IN DETROIT AND FLINT, AND OF PURDUE UNIVERSITY AT FT. WAYNE; AND THE COOPERATIVE ARRANGEMENTS ESTABLISHED, ALONG WITH THE UNIVERSITY OF WASHINGTON, BY THE WASHINGTON STATE AND OREGON STATE COLLEGES AND THE UNIVERSITY OF IDAHO AT THE HANFORD PLANT AT RICHLAND, WASHINGTON.

PLEAS OF THIS SORT WHICH COME FROM BOTH GOVERNMENTAL AND COMMERCIAL GROUPS, THE POINT WAS MADE THAT THE AVAILABILITY OF AN OPPORTUNITY TO PURSUE A GRADUATE DEGREE WAS PREREQUISITE TO THE AGENCY'S ABILITY TO HOLD ITS PERSONNEL FROM ACCEPTING EMPLOYMENT ELSEWHERE.

U.C.L.A. ACCEPTED THIS REQUEST AS AN OBLIGATION OF A PUBLIC INSTITUTION. AFTER EXTENDED NEGOTIATION, THE NAVY AGREED TO ASSUME THE FULL COST, AND A COMPLETE PROGRAM WAS ESTABLISHED AT CHINA LAKE PERMITTING THE COMPLETION OF A MASTERS DEGREE IN ENGINEERING. LATER, BY REQUEST OF THE NAVY, ADDITIONAL PROGRAMS WERE SET UP IN MATHEMATICS AND PHYSICS. ALTHOUGH THE PHYSICS DEGREE HAS NOW BEEN WITHDRAWN, ENGINEERING AND MATHEMATICS CONTINUE, AND APPROXIMATELY 125 PEOPLE HAVE SO FAR PARTICIPATED IN THE PROGRAMS.

THE CHINA LAKE STUDENTS REGISTER IN THE GRADUATE OFFICE ON THE LOS ANGELES CAMPUS AND MUST MEET PRECISELY THE SAME ADMISSIONS REQUIREMENTS THAT WOULD PERTAIN WERE THEY TO BE REGULARLY ENROLLED IN RESIDENCE. ALTHOUGH PURSUING THEIR DEGREES WHILE FULLY EMPLOYED BY THE NAVY AT THE BASE, THESE PEOPLE GENERALLY ARE ABLE TO SPEND FROM ONE-QUARTER TO ONE-THIRD TIME ON THEIR ACADEMIC WORK, AND THE COMMON PATTERN HAS BEEN THAT THEY CAN COMPLETE A MASTERS DEGREE IN ABOUT THREE YEARS.

TO ATTAIN A WORKABLE COMPROMISE IN THE MAINTENANCE OF HOME CAMPUS QUALITY OF INSTRUCTION, WITHOUT AT THE SAME TIME OVER EXTENDING AND THEREBY DAMAGING THE MORALE OF THE REGULAR STAFF, THREE TYPES OF FACULTY ASSIGNMENT ARE SYNCHRONIZED IN THE OVERALL ARRANGEMENTS. IN THE FIRST PLACE, BASIC CONTINUITY AND STABILITY IS SOUGHT THROUGH THE USE, ON AN ALTERNATING BASIS, OF TWO REGULAR U.C.L.A. STAFF MEMBERS WHO ARE IN CONTINUOUS RESIDENCE AT THE BASE FOR ONE FULL SEMESTER AT A TIME. IN ADDITION, FOUR OR

FIVE OTHER MEMBERS OF THE PERMANENT STAFF, AS A PART OF THEIR NORMAL UNIVERSITY TEACHING LOAD, ARE TRANSPORTED TO CHINA LAKE FROM THE MAIN CAMPUS ONCE A WEEK TO TEACH SPECIFIC COURSES. A THIRD RESOURCE IS THE HIGHLY QUALIFIED SENIOR PROFESSIONAL STAFF OF THE BASE ITSELF. A NUMBER OF THE LOCAL NAVY EMPLOYEES HOLD PH.D. DEGREES, AND WHO, IN MANY INSTANCES, HAVE PREVIOUSLY HELD FACULTY APPOINTMENTS INVOLVING GRADUATE TEACHING. FROM TEN TO THIRTY SUCH INDIVIDUALS ARE, FROM TIME TO TIME, GIVEN TEMPORARY UNIVERSITY APPOINTMENTS AS LECTURERS, AND AS A PART OF THEIR REGULARLY ASSIGNED DUTIES FOR THE NAVY THEY ALSO TEACH COURSES AND OTHERWISE PARTICIPATE IN THE TRAINING OF THE GRADUATE STUDENTS.

THE LABORATORY FACILITIES OF THE BASE ARE OF EXCEPTIONALLY HIGH QUALITY. IN SOME RESPECTS THEY ARE EVEN SUPERIOR TO THOSE AVAILABLE ON THE U.C.L.A. CAMPUS. THEY ARE, IN ANY EVENT, REGULARLY INSPECTED BY BOTH THE GRADUATE DEAN AND THE UNIVERSITY FACULTY PEOPLE RESPONSIBLE FOR MAINTAINING THE ADEQUACY OF THE PROGRAMS IN PROGRESS. A BASIC LIBRARY RESOURCE DEVELOPED ON THE BASE IS AVAILABLE AT ALL TIMES.

THE CHINA LAKE PATTERN WHICH U.C.L.A. UTILIZES IN ESSENTIALLY SIMILAR DESIGN IN OTHER LOCATIONS AND CIRCUMSTANCES, PERMITS THE GRANTING OF MASTERS DEGREES TO STUDENTS WHO WILL NEVER HAVE BEEN IN RESIDENCE ON THE CAMPUS OF THE UNIVERSITY. WHILE THIS EXTENT OF THE DEVELOPMENT IS REPEATED IN ESSENCE IN OTHER SITUATIONS, SUCH AS THE UNIVERSITY OF IDAHO'S INVOLVEMENT AT RICHLAND, WASHINGTON, THE RENSSELAER INSTITUTE AT EAST HARTFORD, CONNECTICUT, OR NEW YORK UNIVERSITY AT MURRAY HILL, NEW JERSEY, A NUMBER OF INSTITUTIONS HAVE TAKEN ONLY A COMPROMISE PARTIAL STEP IN THAT DIRECTION. NOT WISHING TO DENY THE POSSIBILITY OF OFF-CAMPUS GRADUATE WORK, BUT AT THE SAME TIME BEING UNWILLING TO GIVE UP ON-CAMPUS RESIDENCE

REQUIREMENTS ENTIRELY, SCHOOLS LIKE THE UNIVERSITY OF CALIFORNIA AT BERKELEY AND CORNELL UNIVERSITY HAVE MADE ARRANGEMENTS WHEREBY UP TO ONE-HALF OF A TOTAL MASTERS PROGRAM CAN BE ACCOMPLISHED IN AN ESTABLISHED EXTRAMURAL SITUATION, THE REMAINING HALF OF THE WORK HAVING TO BE DONE IN REGULAR RESIDENCE. A VARIANT POSSIBILITY EXISTS AT THE UNIVERSITY OF WASHINGTON WHERE A STUDENT CAN ACCOMPLISH ONE OF HIS THREE QUARTERS AT THE HANFORD PLANT, WHILE BEING REQUIRED TO COME TO SEATTLE FOR THE OTHER TWO QUARTERS.¹¹

WITH RESPECT TO THE NATURE OF THE PRESSURES THAT OUR UNIVERSITIES HAVE FELT IN CONNECTION WITH OFF-CAMPUS GRADUATE EDUCATION AND THE RANGE OF REACTIONS THAT HAVE BEEN FORTHCOMING FROM INDIVIDUAL INSTITUTIONS, AT LEAST TWO BASIC GENERALIZATIONS WOULD SEEM TO BE JUSTIFIED. IN THE FIRST PLACE, THE GOVERNMENTAL AND INDUSTRIAL GROUPS INSISTENTLY CONCERNED WITH PROMOTING SUCH DEVELOPMENTS CAN SO PERSUASIVELY ARGUE THE FUNDAMENTAL PUBLIC SERVICE ASPECTS OF THE ARRANGEMENTS THAT IT IS EXTREMELY DIFFICULT, IF, INDEED, IN SOME CIRCUMSTANCES NOT VIRTUALLY IMPOSSIBLE, FOR THE TAX-SUPPORTED INSTITUTION TO RESIST. THE PRIVATELY SUPPORTED UNIVERSITY IS OBVIOUSLY FAR FREER THAN THE PUBLIC INSTITUTION TO DEFINE AND RESTRICT ITS OBLIGATIONS. WITH ONLY RARE EXCEPTIONS, THE PRIVATE UNIVERSITIES HAVE EXERCISED THEIR TRADITIONAL INDEPENDENCE OF ACTION IN THIS CONNECTION AND HAVE ALMOST UNIFORMLY REFUSED TO ENGAGE IN NON-RESIDENT GRADUATE WORK. IN THE SECOND PLACE, SINCE THE DEMANDS FOR OFF-CAMPUS CENTERS HAVE BEEN THE MOST NUMEROUS

11. AT THE TIME OF MY VISIT THE PEOPLE IN ENGINEERING AT THIS INSTITUTION WERE TALKING OF LOWERING THE SEATTLE RESIDENCE REQUIREMENT IN CONNECTION WITH THE HANFORD PLANT PROGRAM FROM TWO QUARTERS TO ONE QUARTER.

AND PERSISTENT IN AREAS OF TECHNOLOGY, IT HAS BEEN THE PUBLICLY-SUPPORTED UNIVERSITIES WHICH MORE GENERALLY ENCOMPASS THE SEVERAL FIELDS OF ENGINEERING MOST IN DEMAND. THIS IS NOT TO SAY, HOWEVER, THAT PUBLIC UNIVERSITIES HAVE BEEN OBLIGED TO ENTER INTO UNWISE ACADEMIC PROGRAMS. INDEED, IT COULD BE ARGUED THAT BECAUSE THEY MUST BE READILY RESPONSIVE TO PUBLIC NEED, THEY ARE IN LESS DANGER THAN THE PRIVATE UNIVERSITY OF BECOMING THE VICTIMS OF THEIR OWN INGROWN PUBLIC-SERVICE CONSERVATISM, AND THAT THEY ARE INHERENTLY MORE FLEXIBLE IN THEIR ABILITY TO REACH OUT TO GRASP NEW GOALS OF DESIRABLE ACHIEVEMENT.

HAVING SPENT MANY HOURS DISCUSSING OFF-CAMPUS GRADUATE WORK WITH A WIDE ARRAY OF INDIVIDUALS, I, OF COURSE, ENCOUNTERED AN IMPRESSIVE DIVERSITY OF PHILOSOPHY AND OPINION. ONE PERSUASIVE ARGUMENT IS THE OBLIGATION, PARTICULARLY OF A STATE UNIVERSITY, TO DO EVERYTHING TO MEET THE LEGITIMATE ACADEMIC NEEDS OF THE SOCIETY WHICH IT SERVES. THERE IS LITTLE DOUBT THAT SUCH NEEDS EXIST. EVERYONE EXPRESSING ANY SHADE OF AN AFFIRMATIVE POINT OF VIEW IN THE MATTER IS UNITED IN THE CONVICTION THAT OFF-CAMPUS GRADUATE STUDY DEVELOPMENTS MUST CARRY SAFEGUARDS DEVISED WITH EXTREME CAUTION TO ASSURE THE MAINTENANCE OF QUALITY OF STAFF AND FACILITIES AT LEVELS DEEMED WHOLLY ACCEPTABLE ON THE HOME CAMPUS. AND, IT IS ARGUED, THERE IS NO REASON WHY THIS CANNOT BE DONE.

ALSO ON THE PLUS SIDE OF THE LEDGER, IT HAS BEEN DEMONSTRATED THAT ARRANGEMENTS OF THE CHINA LAKE OR BELL LABORATORY TYPE CAN BE USED TO MAKE EDUCATIONALLY USEFUL THE POTENTIALLY COMPETENT INSTRUCTIONAL PERSONNEL ATTACHED TO GOVERNMENTAL AGENCIES AND INDUSTRY, AS WELL AS MANY OF THE VALUABLE AND HIGH QUALITY PHYSICAL FACILITIES WHICH THEY HAVE AT THEIR DISPOSAL, AND WHICH WOULD NOT OTHERWISE BE AVAILABLE. WITH CURRENT

SHORTAGES OF SPACE, MODERN EQUIPMENT AND ADEQUATELY TRAINED PEOPLE, ANY SUCH SUPPLEMENTATION OF THE OVERALL NATIONAL ACADEMIC RESOURCE IS TO BE SOUGHT RATHER THAN SHUNNED. AND OF THE STUDENTS EDUCATED IN SUCH CENTERS, CAN IT NOT BE SAID THAT, QUITE APART FROM TESTING THE VALIDITY OF THE ADVANTAGES OF ON-CAMPUS RESIDENCE, THEY ARE NOT BETTER OFF THAN THEY WOULD HAVE BEEN WITH NO ADVANCED EDUCATIONAL OPPORTUNITY AT ALL? INTERESTING AND PERHAPS SOMEWHAT UNEXPECTED SUPPORT FOR THIS GENERAL LINE OF REASONING WAS FOUND AMONG GRADUATE AND ENGINEERING DEANS IN SUCH PRIVATELY SUPPORTED UNIVERSITIES AS STANFORD, YALE AND COLUMBIA WHERE, EVEN THOUGH SUCH ACTIVITY IS NOT ENCOMPASSED BY THEIR OWN POLICIES OF OPERATION, THEY EXPRESSED THE CONVICTION THAT FOR A PUBLIC INSTITUTION IT WAS NOT ONLY AN INESCAPABLE OBLIGATION, BUT A DESIRABLE PRACTICE.

IN CONTRAST TO SUCH POINTS OF VIEW, ONE ENCOUNTERS, AND CERTAINLY CANNOT IGNORE, A HOST OF STRONGLY NEGATIVE REACTIONS WHICH ARE BASED ON BOTH PRACTICAL AND THEORETICAL CONSIDERATIONS. ONE CONCERN, OR CLUSTER OF CONCERNS, HAS TO DO WITH THE ACUTE DIFFICULTIES INVOLVED IN PROPERLY STAFFING AN OFF-CAMPUS ENTERPRISE. EVEN THE BEST OF OUR UNIVERSITIES, SOME ARGUE, ARE NOW ENGAGED IN A DESPERATE STRUGGLE TO RECRUIT AND HOLD HIGH QUALITY FACULTIES FOR JUST ON-CAMPUS INSTRUCTION. EVERYONE RECOGNIZES THAT THIS SITUATION WILL BECOME EVEN MORE DIFFICULT IN THE YEARS IMMEDIATELY AHEAD. COMPOUNDING THE PROBLEM IS THE SHORTAGE OF COMPETENT ACADEMIC TALENT FITTED TO HANDLE GRADUATE EDUCATION. NOWHERE IS THIS MORE SEVERE THAN IN ENGINEERING, THE VERY AREA MOST URGENTLY SOUGHT FOR OFF-CAMPUS PROGRAMS. NO MATTER HOW CONVINCINGLY THE NEED FOR BROADENED OPPORTUNITIES IN EDUCATION MAY BE PRESENTED IT CLEARLY WILL BE TO EVERYONE'S DISADVANTAGE, BOTH INSIDE AND OUTSIDE THE UNIVERSITY COMMUNITY, IF THE CORE OF THE

ON-CAMPUS PROGRAM IS WEAKENED BY OVEREXTENSION OF OFF-CAMPUS PROGRAMS.

MANY, IF NOT MOST OF THE INSTITUTIONS VISITED, SEE AN INTEGRATED SOLUTION LIKE CHINA LAKE AS THOROUGHLY UNSATISFACTORY. THE PERSONNEL RESOURCES OF THE UNIVERSITY ARE, IT IS ALMOST EVERYWHERE EMPHASIZED, ALREADY TAXED TO THE LIMIT. THERE IS NO SLACK TO BE TAKEN UP, AND IF YOU ARE TO MAKE OFF-CAMPUS TEACHING A PART OF THE REGULARLY ASSIGNED TEACHING LOAD YOU WILL HAVE TO RECRUIT ADDITIONAL FACULTY TO FILL IN AT HOME. STAFF EXPANSION AT HIGH QUALITY LEVELS IS EXTREMELY DIFFICULT, AND IN MANY INSTANCES NEXT TO IMPOSSIBLE. THE ADVISABILITY OF MAKING COMMUTERS OF RESIDENT FACULTY MEMBERS IS SERIOUSLY QUESTIONED. SUCH A PRACTICE RESULTS IN HAVING STAFF MEMBERS AWAY FROM THE CAMPUS WHEN THEY SHOULD BE AVAILABLE TO THE STUDENTS AT HOME. FURTHERMORE, IT IS TIRING TO BE ON THE ROAD AT FREQUENT AND REGULAR INTERVALS AND THIS FACT, ADDED TO THE TIME LOST THROUGH ABSENCE, SURELY CUTS DOWN THEIR EFFECTIVENESS AND PRODUCTIVITY IN RESEARCH.

BEYOND THESE CONSIDERATIONS, THE IDEA OF MAKING LIBERAL USE OF TEMPORARILY APPOINTED NON-UNIVERSITY PERSONNEL IN OFF-CAMPUS TEACHING SITUATIONS IS VIEWED WITH GENUINE ALARM. IT IS WIDELY FELT THAT, PARTICULARLY AT THE GRADUATE LEVEL, DESIRABLE ACADEMIC QUALITY CAN ONLY BE UPHELD BY A STAFF THAT LIVES, WORKS AND THINKS TOGETHER IN A COHESIVE GROUP. NO MATTER HOW STRONG THE PROFESSIONAL BACKGROUND OF A MAN FROM GOVERNMENT OR INDUSTRY MAY BE, AND NO MATTER WHAT HIS EXPERIENCE, HE IS NOT, AND BY CIRCUMSTANCE CANNOT BE, A CLOSELY INTEGRATED PART OF THE TRADITIONS AND STANDARDS OF THE ON-CAMPUS DEPARTMENT IN THE UNIVERSITY THAT IS TO GRANT THE DEGREE.

QUITE ABOVE AND BEYOND THE CONCERNS FOR THE PROBLEMS OF STAFF, THERE IS ANOTHER FACTOR WHICH MORE THAN ANY OTHER BRINGS RESISTANCE TO OFF-CAMPUS ACTIVITY. THIS IS THE WIDELY HELD AND DEEPLY INGRAINED CONFIDENCE OF

PERSONS ASSOCIATED WITH GRADUATE EDUCATION IN THE IMPORTANCE OF ON-CAMPUS RESIDENCE. VIRTUALLY EVERY GRADUATE SCHOOL HAS ITS OWN REGULATIONS PERTAINING TO RESIDENCE. ALL ARE DESIGNED TO PROTECT AND PRESERVE THOSE TANGIBLE AND INTANGIBLE GAINS IN INTELLECTUAL MATURITY AND INSIGHT WHICH ARE BELIEVED TO COME ONLY FROM INTIMATE AND PROLONGED CONTACT WITH ALL FACETS OF AN ACADEMIC COMMUNITY DEDICATED TO THE AIMS OF SCHOLARSHIP. SUCH COMMENTS AS, "A GRADUATE STUDENT MUST GET MORE THAN JUST MARKS IN THE REGISTRAR'S OFFICE," OR "I'M OLD FASHIONED ENOUGH TO BELIEVE THAT THE CAMPUS ITSELF HAS SOMETHING TO CONTRIBUTE," OR "ONE NEEDS TO LIVE IN THE ENVIRONMENT AND AROMA OF A UNIVERSITY, AND IT IS DOING NO ONE A FAVOR TO DILUTE HIS EXPERIENCE AND THEN CLAIM THAT IT WAS FULL STRENGTH," OR "GRADUATE DEGREES ARE NOT JUST A SEQUENCE OF COURSES AND A CERTIFICATE, THEY ARE OR SHOULD BE, THE HALLMARK OF TIME SPENT WITH UNDIVIDED ATTENTION TO REFLECTION AND LEARNING IN THE SURROUNDINGS OF ACADEMIC LIFE," REFLECT TYPICAL ATTITUDES HELD WITH GREAT SINCERITY AND FIRMNESS OF PURPOSE.

SOME ASPECTS OF THE ACCEPTED VALUES OF RESIDENCE ARE MORE CLEARLY DEFINED AND EASILY MEASURED THAN OTHERS. SUSTAINED OPPORTUNITIES TO ASSOCIATE WITH THE MATURE SCHOLARS OF THE FACULTY, TO COME TO KNOW THEM AND BE KNOWN BY THEM AT REASONABLY CLOSE AND INTIMATE RANGE, THE PRESENCE OF THE FULL RANGE OF PHYSICAL FACILITIES THAT HAVE BEEN BROUGHT TOGETHER IN LIBRARIES, LABORATORIES AND CLASSROOMS DESIGNED TO BEST MEET THE NEEDS OF STUDENTS, THE WIDE RANGE OF COURSE OFFERINGS AND SEMINARS BOTH IN THE DEPARTMENT OF THE MAJOR AND IN THE FULL ARRAY OF ALLIED DEPARTMENTS, THE AVAILABILITY OF JOURNAL CLUBS, MEETINGS OF PROFESSIONAL SOCIETIES, VISITING LECTURERS AND DISCUSSION OPPORTUNITIES WITH GROUPS OF FELLOW STUDENTS WHERE ATTACKING AND DEFENDING IDEAS SHARPENS CRITICAL AND LOGICAL THINKING

ARE ALL TANGIBLE ATTRIBUTES OF RESIDENCY THAT ARE WIDELY VIEWED AS BEING VITAL TO THE IDEAL OF GRADUATE EDUCATION. THEY ARE DIFFICULT TO DUPLICATE IN OFF-CAMPUS SITUATIONS. URGENTLY STATED CONVICTIONS ARE ALSO HEARD CONCERNING THE LESS CONCRETE, BUT NONE THE LESS VALUED, GAINS THAT "RUB OFF ON A STUDENT" SIMPLY BECAUSE OF HIS LIFE AND INVOLVEMENT IN A GENUINE ACADEMIC SETTING.

CLOSELY ALLIED TO THESE CONSIDERATIONS IS THE DIVIDED ATTENTION INHERENT IN THE WAY OF LIFE OF A PART-TIME STUDENT. MANY INSTITUTIONS CLAIM THAT STUDENTS WHO SIMULTANEOUSLY ATTEMPT TO CARRY A JOB AND A PARTIAL ACADEMIC PROGRAM SIMPLY DO NOT LIVE UP TO THEIR PROMISE AS SCHOLARS. GRADUATE WORK IS IN ITSELF A RIGOROUS OCCUPATION, DEMANDING FULL CONCENTRATION AND SINGLENESSE OF PURPOSE. TO REMOVE A PERSON FROM THE ACADEMIC ENVIRONMENT AND THEN TO DIVIDE HIS ATTENTION BETWEEN WHAT AMOUNTS TO A FULL-TIME JOB AND INVOLVEMENT IN GRADUATE STUDY, IS WIDELY VIEWED AS CREATING A SITUATION FROM WHICH TRUE MATURITY IN SCHOLARSHIP CANNOT BE EXPECTED TO EMERGE.

THERE IS ALSO A WIDESPREAD SUSPICION OF THE SINCERITY OF PURPOSE OF THE GOVERNMENT AGENCIES AND INDUSTRIAL CONCERNS WHICH DEMAND OFF-CAMPUS PROGRAMS. IT IS COMMONLY CHARGED THAT MANY OF THESE GROUPS ONLY SEEK A USEFUL "GIMMICK" FOR RECRUITING PURPOSES AND THAT THEY ARE NOT SINCERELY INTERESTED IN ANY ACTUAL ACADEMIC ACCOMPLISHMENT. IT IS ARGUED THAT IF AN EMPLOYER IS GENUINELY CONCERNED ABOUT HAVING SELECTED EMPLOYEES UNDERTAKE GRADUATE STUDY, HE WOULD REALIZE THAT IN THE LONG RUN IT WOULD BE CHEAPER AND OF GREATER ADVANTAGE TO EVERYONE CONCERNED TO GIVE A MAN A FULL-TIME LEAVE ON PAY TO GO TO A UNIVERSITY CAMPUS AND DO HIS WORK UNDER THE BEST POSSIBLE CIRCUMSTANCES.

IT SHOULD BE ADDED THAT MANY OF THE SEVEREST CRITICS OF OFF-CAMPUS GRADUATE WORK ARE QUICK TO SAY THAT THEY SEE REAL ADVANTAGES IN PROVIDING SPECIFIC COURSES DESIGNED TO MEET THE NEEDS OF PARTICULAR GROUPS OF NON-RESIDENT PEOPLE. THEN THEY ASK, "BUT WHY DOES SUCH WORK HAVE TO LEAD TO A DEGREE?". IT IS OFTEN OBSERVED THAT OUR SOCIETY SEEMS TO HAVE SUCCUMBED TO "DEGREEITIS." TOO MUCH EMPHASIS IS PLACED ON THE RECEIPT OF DIPLOMAS, AND TOO LITTLE ON A WILLINGNESS TO MEET FORESHORTENED PRACTICAL ENDS WITH ACTIVITIES THAT NEED NOT, AND SHOULD NOT, GET MIXED UP WITH ACADEMIC GOALS DESIGNED FOR ANOTHER PURPOSE. AS THE PROVOST OF ONE INSTITUTION VISITED PUT IT, "THE WAY THINGS ARE GOING WE WILL SOON BE PASSING OUT DEGREES LIKE EVENING NEWSPAPERS."

THERE ARE MANY MORE RAMIFICATIONS TO THE OFF-CAMPUS PROBLEM THAN THIS LIMITED DISCUSSION CAN HOPE TO EXPLORE. IN SUM, WE HAVE A STRONG AND PROBABLY IN MOST INSTANCES SINCERE, NEED ON THE ONE HAND, AND A VARIETY OF BLINKING YELLOW LIGHTS OF CAUTION, IF NOT RED LIGHTS OF SEVERE DANGER, ON THE OTHER. THE HEART OF THE PROBLEM OBVIOUSLY IS IMBEDDED IN THE COMPLEX CONCEPTS OF RESIDENCY. THE TERM RESIDENCE IS, IN THE FIRST INSTANCE, EVEN DIFFICULT TO DEFINE. THERE IS NO QUICKER WAY TO THROW A MEETING OF GRADUATE DEANS INTO BABBLING CHAOS THAN TO RAISE THE QUESTION! DOES THE WORD MEAN SIMPLY LIVING FULL TIME ON A CAMPUS EVEN THOUGH PARTIALLY EMPLOYED? OR DOES IT MEAN FULL TIME DEVOTED TO STUDY ON A CAMPUS? WHERE DOES ONE DRAW THE LINE IN A LARGE METROPOLITAN UNIVERSITY, FOR EXAMPLE IN NEW YORK, WHERE STUDENTS LIVE IN FIVE WIDELY SCATTERED BOROUGHS AND TWO OR THREE STATES, AND WHERE STUDENT ACTIVITY VARIES FROM A PERSON COMING IN TO THE CAMPUS TWO OR THREE HOURS A WEEK FOR A SINGLE COURSE, TO OTHERS WHO MAY RIDE THE SUBWAY DAILY TO A FULL SCHEDULE OF CLASSES? IN TERMS

OF RESIDENCY IS THERE ANY DIFFERENCE BETWEEN EXTENSION COURSES GIVEN ON THE CAMPUS IN THE EVENING AND THE SAME COURSES GIVEN BY THE SAME INSTRUCTORS DURING THE CONVENTIONAL DAYTIME HOURS?

QUITE APART FROM A COMPLETE LACK OF AGREEMENT ON A DEFINITION OF RESIDENCY, WHAT DO WE REALLY KNOW ABOUT THE BASIC VALIDITY OF OUR CONCEPTS CONCERNING THE ACADEMIC VALUES SAID TO BE INHERENT IN IT? WE HAVE VAST AMOUNTS OF PRESUMPTION, TRADITION AND VEHEMENCE OF OPINION, BUT A GREAT PAUCITY OF ESTABLISHED MEASUREMENT AND FACT. AS THE DEMANDS FOR EXTENSION AND ADULT EDUCATION CONTINUE TO GROW, AS NEW DAYS OF EDUCATIONAL OPPORTUNITY AND CHALLENGE DAWN, THIS IS A BASIC ISSUE THAT CALLS FOR EXTENSIVE, PAINSTAKING, OBJECTIVE EXAMINATION.

I AM CONVINCED THAT OFF-CAMPUS GRADUATE INSTRUCTION IS AT BEST AN EXPENSIVE, COMPLICATED AND DIFFICULT EDUCATIONAL OPERATION, FRAUGHT WITH MANY CONCERNS. AT THE MOMENT, NEITHER I NOR APPARENTLY ANYONE ELSE CAN REALLY ASSESS THE ROLE OF RESIDENCY. ALMOST CERTAINLY THERE IS NO SINGLE, SIMPLE ANSWER. SURELY THERE ARE DIFFERENCES THAT DERIVE FROM THE REQUIREMENTS PECULIAR TO VARIOUS FIELDS OF WORK, TYPES OF STAFF AND STUDENTS INVOLVED, AND A VARIETY OF OTHER IMPINGING CIRCUMSTANCES.

WHATEVER THE CASE MAY BE, CLEARLY WE HAVE NEED OF DEVISING AND APPLYING ACCURATE MEASURES OF COMPARATIVE EFFECTIVENESS OF ALL MANNER OF EDUCATIONAL EXPERIENCE ON AND OFF AN ESTABLISHED CAMPUS. WE NEED TO KNOW IN SPECIFIC TERMS WHICH OF THE PRESUMED VALUES OF RESIDENCY ARE TRULY VALID. ONLY THEN CAN WE JUDGE WHETHER IT IS FEASIBLE TO TRANSFER THOSE CONDITIONS TO OFF-CAMPUS SITUATIONS. FURTHERMORE, IF NON-RESIDENT INSTRUCTION PRODUCES LESS ADEQUATE RESULTS THAN RESIDENT INSTRUCTION, HOW MUCH LESS ADEQUATE IS IT? QUESTIONS OF THIS SORT HAVE BEEN, SO FAR, ONLY

INCONCLUSIVELY DISCUSSED BY THE COUNCILS ON GRADUATE WORK AND GENERAL EXTENSION OF THE ASSOCIATION OF LAND GRANT COLLEGES AND UNIVERSITIES FOR SOME YEARS. I STRONGLY COMMEND THE NEED FOR A REAL EXAMINATION OF THIS SUBJECT TO THE CARNEGIE CORPORATION. SUPPORT FOR A WELL-CONCEIVED, COMPREHENSIVE, LONG-RANGE STUDY ON THESE MATTERS COULD PROVIDE GUIDING ILLUMINATION OF INESTIMABLE VALUE AS OUR UNIVERSITIES FACE UP TO THEIR RESPONSIBILITIES OF TODAY AND TOMORROW.

VI. GRADUATE WORK IN THE MEDICAL SCIENCES.

THE UNIVERSITIES OF THE NATION ARE CONFRONTED WITH A GROUP OF CLOSELY INTERRELATED, AND IN MANY WAYS DISTINCTIVE PROBLEMS ASSOCIATED WITH THE NEED FOR AN EXPANDED STRENGTH OF GRADUATE EDUCATION IN THE PROFESSIONAL AREAS. THE SITUATION APPEARS TO BE PARTICULARLY CRITICAL IN MEDICINE, DENTISTRY, PHARMACY AND ENGINEERING, THOUGH PERHAPS ALSO IN BUSINESS ADMINISTRATION, LAW, AGRICULTURE AND EDUCATION. IT SEEMS TO CALL BOTH FOR NEW AND BROADENED PROGRAM OFFERINGS AS WELL AS FOR SUBSTANTIALLY INCREASED NUMBERS OF STUDENTS. THE NATURE OF THESE NEEDS IS FAR FROM SIMPLE AND ALMOST DEFIES GENERALIZATION.

ONE THING IS ABUNDANTLY CLEAR, NAMELY THAT THE DEMAND WILL FAR EXCEED THE SUPPLY OF THE IMMEDIATE FUTURE FOR HIGHLY TRAINED, RESEARCH-ORIENTED ACADEMIC PEOPLE TO MAN THE FACULTIES OF OUR INSTITUTIONS OF HIGHER LEARNING. THE FINANCIAL REWARDS OF COMMERCIAL PRACTICE AWAITING PERSONS TRAINED IN ALL OF THE PROFESSIONS EXCEPT TEACHING SO FAR EXCEED THE SALARY POTENTIAL IN THE UNIVERSITIES THAT IT IS DIFFICULT TO EVEN ENTICE ABLE PEOPLE INTO THE ACADEMIC LIFE. THIS PROBLEM IS, OF COURSE, ALMOST HOPELESSLY COMPOUNDED BY THE ADDITIONAL GRADUATE DEGREES APPROPRIATE TO COLLEGIATE FACULTY STATUS. THIS ADDS SEVERAL ADDITIONAL YEARS OF FINANCIAL

STRAIN AND HARDSHIP PREPARING FOR A CAREER ULTIMATELY LESS LUCRATIVE THAN PRIVATE PRACTICE OR BUSINESS.

IN THE PROFESSIONS, AN APPRENTICE LAWYER, A COMPANY-EMPLOYED ENGINEER, OR EVEN A MEDICAL RESIDENT, IS IN A POSITION TO EARN SOMETHING APPROACHING LIVABLE WAGES AS HE DEVELOPS TOWARD MATURITY OF PRACTICE. THE ACADEMIC APPRENTICE, BY CONTRAST, AS IF IN TRAINING FOR HIS MEAGER FINANCIAL REWARDS OF LATER LIFE, MUST UNDER THE MOST FAVORABLE OF CIRCUMSTANCES, SCRIMP THROUGH HIS EXTRA YEARS OF GRADUATE STUDY ON WHOLLY INADEQUATE ASSISTANT-SHIP OR FELLOWSHIP STIPENDS.

CIRCUMSTANCES, TO BE SURE, ARE ANYTHING BUT COMMON TO ALL OF THE PROFESSIONAL FIELDS. IN ENGINEERING, A PERSON CAN ENTER ACTIVE PRACTICE AFTER A DECIDEDLY SMALLER NUMBER OF YEARS IN SCHOOL THAN IS TRUE, FOR EXAMPLE, IN MEDICINE. INTERESTINGLY ENOUGH, HOWEVER, INCREASING TECHNOLOGIC SPECIALIZATION AND THE WIDELY EXPANDING CALLS FOR RESEARCH IN NON-ACADEMIC ESTABLISHMENTS OF ALL SORTS, ARE CREATING NEW REQUIREMENTS IN CAPACITY. NOW THE EMPLOYERS OF ENGINEERS, WHO WITH STRONG SALARY INDUCEMENTS HAVE BEEN LURING MEN FRESH FROM THEIR BACHELORS DEGREES DIRECTLY INTO PRACTICE, SEE THE NEED FOR MORE LEARNING THAN THE TRADITIONAL FOUR YEARS HAVE PROVIDED. THEY ARE TAKING A NEW AND ACTIVE INTEREST IN THE VALUES OF GRADUATE EDUCATION. THE FACT THAT, AS HAS ALREADY BEEN NOTED, THE GREATEST CONCERNS FOR OFF-CAMPUS GRADUATE PROGRAMS HAVE COME FROM GROUPS INTERESTED IN THE CAPABILITIES OF ENGINEERS, BEARS SUPPORTING TESTIMONY TO THIS POINT. MULTIPLYING REQUIREMENTS ACROSS THE COUNTRY FOR ADVANCED ACADEMIC WORK BY TEACHERS IS ANOTHER RECOGNITION THAT A FOUR YEAR UNDERGRADUATE DEGREE IS NOT FULLY ADEQUATE FOR THE ATTAINMENT OF DESIRED LEVELS OF EFFICIENCY IN ANOTHER PROFESSIONAL AREA.

RECOGNIZING THE NEED FOR PROVIDING MORE CONTENT IN THE UNDERGRADUATE PROGRAM THAN THE STANDARD FOUR YEARS HAVE BEEN ABLE TO GIVE, A NUMBER OF SCHOOLS HAVE GONE TO A FIVE YEAR BACCALAUREATE DEGREE IN ENGINEERING. ONE WONDERS WHETHER THE NEEDS REPRESENTED BY THE RISING FLOOD OF MASTERS DEGREE CANDIDATES IN EDUCATION MIGHT NOT MOST APPROPRIATELY BE MET, AT LEAST IN PART, IN THE SAME MANNER. IN A DESIRE TO UPGRADE THE BASIC CAPABILITIES OF TEACHERS, MORE THAN ONE STATE HAS ALREADY PROVIDED THAT A MASTERS DEGREE IS PREREQUISITE TO PROMOTION AND SALARY INCREASES BEYOND STATED LEVELS IN THE PUBLIC SCHOOL SYSTEM. IN INDIANA, FOR EXAMPLE, A MASTERS DEGREE HAS NOW BEEN MADE MANDATORY FOR ANYONE WISHING TO OBTAIN A PERMANENT LICENSE FOR TEACHING IN THAT STATE.

THIS SORT OF BROADLY INDISCRIMINATE REGULATION OBVIOUSLY PRESENTS THE GRADUATE SCHOOL WITH A MOST UNDESIRABLE DILEMMA. ONE KNOWS AT THE OUTSET, JUST ON THE BASIS OF THE NORMAL CURVES APPLIED TO ACADEMIC ACHIEVEMENT, THAT BETTER THAN HALF OF THE TEACHERS TURNED OUT OF THE REGULAR FOUR YEAR UNDERGRADUATE PROGRAMS (LIKE "AVERAGE" BACHELORS DEGREE STUDENTS IN ANY FIELD) ARE NO BETTER THAN "C" STUDENTS. BY DEFINITION, AN "AVERAGE" STUDENT IS A "C" STUDENT. PRESUMABLY THE GRADUATE SCHOOL IS RESERVED FOR THE CLEARLY BETTER-THAN-AVERAGE INDIVIDUAL, AND IN MOST INSTITUTIONS ADMISSION CALLS FOR A MINIMUM OF A "B" GRADE RECORD. HOW THEN DOES ONE MEET A GENERAL REQUIREMENT THAT ALL TEACHERS WISHING A PERMANENT LICENSE SHALL DO GRADUATE WORK?

THERE ARE TWO APPARENT ALTERNATIVES, AND NEITHER SEEMS AT ALL DESIRABLE. EITHER ONE LOWERS THE GRADUATE SCHOOL STANDARDS TO ACCOMODATE THE "C" QUALITY STUDENT, OR HE DENIES MANY PERFECTLY ABLE, AND POTENTIALLY MORE ABLE, TEACHERS THE RIGHT TO IMPROVE THEIR BACKGROUND AND TO ATTAIN

LEGITIMATELY DESIRED LEVELS OF SECURITY AND ADVANCEMENT IN THEIR POSITIONS. DOES NOT A FIFTH UNDERGRADUATE YEAR AND AN APPROPRIATE CERTIFICATE MAKE MORE SENSE FOR THE "AVERAGE" TEACHER THAN AN ATTEMPTED GRADUATE DEGREE? AS A MATTER OF FACT, AS WAS OBSERVED WHEN DISCUSSING OFF-CAMPUS WORK, A PRACTICALLY TAILORED SEQUENCE OF COURSES AND AN APPROPRIATE CERTIFICATION OF COMPLETED ACCOMPLISHMENT, MAY IN MANY CIRCUMSTANCES BE MORE LOGICAL FOR A NUMBER OF THE NON-ACADEMIC NEEDS IN ENGINEERING THAN ANY EFFORT TO STRETCH AND DISTORT STANDARD MASTERS DEGREE PROGRAMS INTO MOLDS WHICH THEY WERE NEVER INTENDED TO FIT.

AMONG THE PROFESSIONAL COLLEGES OF THE UNIVERSITY, NONE REQUIRES ITS STUDENTS TO REMAIN FOR AS MANY YEARS OF STUDY AS MEDICINE. PERHAPS MAINLY FOR THIS REASON THERE HAS UNTIL VERY RECENTLY BEEN LESS OF A SENSE OF URGENCY ABOUT GRADUATE WORK IN THIS AREA THAN IN ANY OF THE OTHERS. FEW WOULD QUESTION THE CLAIM THAT OUR MEDICAL SCHOOLS ARE, WITH UNCOMMON CONCERN FOR STANDARDS, TURNING OUT WELL-TRAINED AND COMPETENT PRACTITIONERS, AND FOR THEM GRADUATE STUDY HAS NOT BEEN VITAL, NOR EVEN WIDELY RECOGNIZED AS ADVANTAGEOUS. NOW, HOWEVER, THERE IS A RISING CRESCENDO OF CONCERN BEING VOICED FOR THE SUPPLY OF MEDICAL SCHOLARS, MEN EQUIPPED TO UNDERTAKE THE INCREASINGLY COMPLEX COMMITMENTS OF RESEARCH, AND MEN NEEDED BY OUR MEDICAL SCHOOL FACULTIES TO TRAIN THE ENLIGHTENED PRACTITIONERS OF THE FUTURE.

THERE IS GOOD REASON TO BELIEVE THAT WHILE DEVELOPMENTAL ADVANCES IN GRADUATE EDUCATION ARE CALLED FOR IN NEARLY ALL OF THE PROFESSIONAL FIELDS, PROBABLY NOWHERE IS THE SITUATION AS ACUTE AS IN THE MEDICAL SCIENCES. THE CENTRAL ISSUE OF HOW WE CAN ATTRACT A LARGER NUMBER OF THE MOST ABLE MINDS AMONG OUR MEDICAL STUDENTS INTO CAREERS IN RESEARCH AND TEACHING,

IS ESPECIALLY DIFFICULT OF SOLUTION. THIS IS BECAUSE AMONG ALL OF OUR PROFESSIONALS THE MEDICAL STUDENT ALREADY FOLLOWS THE LONGEST REQUIRED SEQUENCE OF STUDY, AND BECAUSE THEY ALMOST CERTAINLY HAVE THE STRONGEST FINANCIAL INCENTIVE TO ENTER PRIVATE PRACTICE AT THE EARLIEST POSSIBLE OPPORTUNITY. BECAUSE THIS GENERAL MATTER IS ONE OF MY ACTIVE CONCERNS AT THE UNIVERSITY OF NEBRASKA, AND BECAUSE I SENSE IT TO BE ONE OF THE REALLY SIGNIFICANT PROBLEMS OF GRADUATE EDUCATION NATIONALLY, I SOUGHT TESTIMONY ABOUT IT AT ALL OF THE INSTITUTIONS VISITED THAT HAVE MEDICAL SCHOOL INVOLVEMENTS.¹²

WHILE PRACTICES AND AVAILABLE PROGRAMS VARY FROM INSTITUTION TO INSTITUTION AND EVEN MORE FROM INDIVIDUAL STUDENT TO INDIVIDUAL STUDENT, GRADUATE WORK IN THE MEDICAL AREA HAS TRADITIONALLY FOLLOWED CERTAIN RATHER SPECIFIC PATTERNS IN MOST SCHOOLS. THE MASTER OF SCIENCE AND DOCTOR OF PHILOSOPHY ARE IN MOST PLACES RESTRICTED TO THE BASIC SCIENCES RATHER THAN THE CLINICAL FIELDS, AND THE STUDENTS PURSUING THOSE DEGREES MAY OR MAY NOT ALSO GAIN AN M.D. WITH MINOR VARIATIONS, ONE OR THE OTHER OF THREE BASIC PATTERNS OF PROCEDURE AND TIMING IS GENERALLY FOLLOWED.

(1) SOME STUDENTS EMERGING FROM THEIR BACCALAUREATE YEARS OF COLLEGE MOVE DIRECTLY INTO SUCH MEDICAL SCHOOL DEPARTMENTS AS BIOCHEMISTRY, ANATOMY, MICROBIOLOGY OR PHYSIOLOGY AND UNDERTAKE GRADUATE STUDY AT EITHER THE MASTERS OR DOCTORAL LEVEL WITHOUT ENTERING THE STANDARD M.D. PROGRAM. IT IS TO BE HOPED THAT, TO MEET THE NEEDS OF THE FUTURE IN BOTH RESEARCH AND TEACHING, THE PRESENT SMALL NUMBERS OF SUCH INDIVIDUALS CAN BE SUBSTANTIALLY INCREASED. (2) A SECOND WELL-ESTABLISHED ROUTE IS TO ENTER

12. THE ONLY SCHOOLS ON THE ITINERARY THAT DO NOT HAVE MEDICAL SCHOOLS ARE CAL. TECH., M.I.T. AND RICE.

THE REGULAR MEDICAL COURSE FOR THE TWO BASIC SCIENCE YEARS. AT THE END OF THIS PERIOD, INSTEAD OF CONTINUING TO THE CONCLUDING CLINICAL SEQUENCES OF M.D. TRAINING, HE DROPS OUT, ENTERS THE GRADUATE SCHOOL IN ONE OF THE BASIC SCIENCE DEPARTMENTS, AND PROCEEDS TO A MASTERS AND/OR DOCTORS DEGREE. SUBSEQUENTLY THEN HE CAN RETURN TO COMPLETE HIS WORK FOR THE DOCTOR OF MEDICINE. FOR PERSONS WISHING TO ACCOMPLISH BOTH THE PROFESSIONAL AND GRADUATE DEGREES, THIS IS WIDELY ACCEPTED AS BEING THE MOST GENERALLY DESIRABLE PLAN. (3) A THIRD AND NOT UNCOMMONLY ADOPTED ALTERNATIVE IS FOR A PERSON TO ENTER AND COMPLETE THE M.D. PROGRAM, OFTEN INCLUDING AN INTERNSHIP THOUGH SELDOM A RESIDENCY, AND THEN TO PURSUE ONE OR MORE DEGREES IN THE GRADUATE SCHOOL.

THE STUDENT'S INVESTMENT IN MONEY AND TIME TO ATTAIN BOTH THE M.D. AND PH.D. DEGREES, PRESUMABLY THE IDEAL IN TRAINING AND EDUCATION FOR A CAREER IN RESEARCH OR TEACHING IN MEDICINE, IS OBVIOUSLY ENORMOUS. FOR MANY IT IS PROHIBITIVE. FOUR YEARS AS AN UNDERGRADUATE, FOUR YEARS AS A MEDICAL STUDENT (FIVE IF AN INTERNSHIP IS INCLUDED), AND AN ADDITIONAL THREE YEARS FOR A PH.D., ADDS TO A TOTAL OF 11 TO 12 YEARS OF LIFE AS A UNIVERSITY STUDENT. AS ONE EXASPERATED DEAN OF MEDICINE OBSERVED: "WHY GOOD HEAVENS, A MAN WILL BE STERILE BEFORE HE CAN AFFORD TO GET MARRIED!"

THE TIME REQUIRED TO COMPLETE WORK SIMULTANEOUSLY FOR BOTH THE M.D. AND PH.D. DEGREES IS IN REALITY, HOWEVER, NO MORE PROLONGED THAN THE OVERALL PROGRAM OF A CLINICAL SPECIALIST WHO IN LIEU OF A PH.D. MUST SPEND ANYWHERE FROM 2 TO 6 OR 7 YEARS ON A HOSPITAL RESIDENCY. TO BE SURE, A CLINICAL RESIDENT CAN EXPECT SOMEWHAT MORE GENEROUS FINANCIAL SUPPORT THAN A GRADUATE STUDENT, BUT THIS IS NOT THE MOST CRUCIAL ISSUE. THE FUNDAMENTAL PROBLEM IS HOW TO EXPOSE SUFFICIENTLY ABLE MEDICAL STUDENTS TO THE

ATMOSPHERE OF RESEARCH SO THAT LARGER NUMBERS OF THEM WILL BE EXCITED AND INTRIGUED, AND THEREFORE WILLING TO ACCEPT THE LONG-RUN FINANCIAL SACRIFICE OF TURNING TO ACADEMIC MEDICINE. OF COURSE, THE DIRECT APPROACH TO A SOLUTION WOULD BE THE WHOLESALE IMPROVEMENT OF UNIVERSITY AND RESEARCH INSTITUTE SALARY SCALES TO A POINT WHERE THE REWARDS FOR THIS SORT OF SERVICE WOULD BE MORE NEARLY COMPARABLE TO PRIVATE PRACTICE. THE PRACTICALITIES OF LIFE ASSURE ONE THAT THIS DAY IS HARDLY NEAR AT HAND!

ANOTHER APPROACH TO THE PROBLEM THAT MEDICAL SCHOOLS AND GRADUATE SCHOOLS, WORKING IN CLOSE HARMONY AND UNDERSTANDING, MUST CONTINUE TO EXPLORE, IS WAYS AND MEANS OF INTRODUCING AN INITIAL EXPOSURE TO RESEARCH AND/OR ACTUAL GRADUATE WORK INTO EXISTING OR LEGITIMATELY MODIFIED MEDICAL PROGRAMS. WITH THE END IN VIEW OF INVOLVING SIGNIFICANT NUMBERS OF SELECTED MEDICAL STUDENTS IN THIS SORT OF EXPERIENCE IN ORDER THAT THEY CAN TEST THEIR INTEREST AND ABILITY IN IT, IT IS IMPORTANT TO PROVIDE THE OPPORTUNITY UNDER ARRANGEMENTS THAT DO NOT INTRODUCE SUBSTANTIAL NEW EXTENSIONS OF TIME INTO THE ALREADY LENGTHY SEQUENCE. TWO OR THREE POSSIBILITIES RECOMMEND THEMSELVES FOR CONSIDERATION, AND ARE IN VARIOUS WAYS BEING UTILIZED IN SOME INSTITUTIONS ACTIVELY GRAPPLING WITH THE PROBLEM.

MEDICAL SCHOOLS, SUCH AS THOSE AT THE UNIVERSITY OF NEBRASKA AND AT YALE UNIVERSITY, HAVE FOR MANY YEARS HAD A REQUIREMENT OF A SENIOR THESIS FOR ALL MEDICAL STUDENTS. IN THIS MANNER ALL INDIVIDUALS SEEKING THE M.D. DEGREE HAVE SOME AT LEAST MINIMAL EXPERIENCE IN SEARCHING OUT, DEFINING AND SOLVING A RESEARCH PROBLEM. UNDOUBTEDLY THIS PROCEDURE IS EFFECTIVE IN LEADING OCCASIONAL PERSONS INTO MORE EXTENDED LATER INVOLVEMENT IN INVESTIGATIVE WORK, AND PERHAPS GRADUATE STUDY.

IN A CLEARLY OVERT EFFORT TO PROSELYTIZE IN BEHALF OF ACADEMIC MEDICINE, THE TULANE UNIVERSITY MEDICAL AND GRADUATE SCHOOLS HAVE JOINED HANDS TO ESTABLISH A COMBINED M.D.-M.S. FOUR YEAR PROGRAM. THE ARRANGEMENTS PROVIDE THAT MEDICAL STUDENTS IN THE TOP TEN PERCENT OF THEIR CLASS AT THE END OF THEIR SECOND YEAR MAY PURSUE THE PROFESSIONAL AND THE FIRST GRADUATE DEGREES SIMULTANEOUSLY. THE TWO SUMMERS, BETWEEN THE SECOND AND THIRD YEARS AND BETWEEN THE THIRD AND FOURTH YEARS, ARE USED FOR MASTERS THESIS RESEARCH. DURING THE REGULAR THIRD AND FOURTH ACADEMIC YEARS OF THE M.D. PROGRAM, THESE STUDENTS ARE ALLOWED TO TAKE A TOTAL OF 12 CREDITS (SIX EACH YEAR) IN GRADUATE SEMINARS IN ADDITION TO THEIR STANDARD MEDICAL COURSES. READING PROFICIENCY IN ONE FOREIGN LANGUAGE IS MAINTAINED, AND TO COMPLETE A MASTERS PROGRAM, GRADUATE CREDIT IS GRANTED FOR SOME OF THE BASIC SCIENCE WORK DONE DURING THE FIRST TWO YEARS IN MEDICINE.

IT IS ARGUED THAT THE ADMISSION REQUIREMENTS OF THE MEDICAL SCHOOL ARE HIGH IN THE FIRST PLACE AND THAT WHEN YOU THEN TAKE ONLY THE TOP TEN PERCENT OF THOSE, YOU HAVE ACHIEVED A SELECTION OF UNUSUALLY ABLE PEOPLE WHO ARE THOROUGHLY CAPABLE OF MEETING THE REQUIREMENTS OF THE TWO DEGREES IN A FOUR YEAR PERIOD. INDEED, TULANE IS SO PLEASED WITH THE OPERATION OF THE PLAN THAT THEY ARE CONSIDERING MAKING IT AVAILABLE TO THE TOP TWENTY FIVE PERCENT OF THE SECOND YEAR CLASS. SEVEN OF THE TEN STUDENTS IN A CLASS OF 100 TO WHOM THIS OPPORTUNITY WAS INITIALLY MADE AVAILABLE ACCEPTED ITS CHALLENGE, AND EACH OF THE SEVEN HAS INDICATED A GENUINE INTEREST IN PURSUING A CAREER IN ACADEMIC MEDICINE. THE STAFF AT TULANE FEELS THAT SUCH A PROGRAM CANNOT FAIL TO PROMOTE DESIRABLE ENDS. IT IS HOPED THAT MANY, IF NOT MOST, OF THESE TOP QUALITY STUDENTS WILL BE MOTIVATED TO GO ON WITH GRADUATE WORK AND ULTIMATELY TURN TO TEACHING AND RESEARCH.

EVEN THOSE WHO DO NOT ARE VISUALIZED AS BEING BETTER PRACTITIONERS AS A RESULT OF THIS FIRST-HAND EXPERIENCE IN INVESTIGATIVE WORK.

STILL ANOTHER POSSIBILITY, AND ONE TO WHICH I DEVOTED SOME PARTICULAR ATTENTION DURING MY TRAVELS, IS ENLARGING GRADUATE STUDY IN THE MEDICAL SCIENCES, I.E., THE PROVISION OF A FRAMEWORK FOR ACCOMPLISHING A MASTERS DEGREE WITHIN THE ALREADY ESTABLISHED TIME LIMITATIONS OF THE CLINICAL RESIDENCY PERIOD. A NUMBER OF SCHOOLS HAVE ALREADY WORKED OUT PLANS OF THIS TYPE, IN CERTAIN FIELDS, AND A NUMBER OF OTHER INSTITUTIONS, INCLUDING MY OWN, ARE SUBJECTING THE MATTER TO DEBATE AND STUDY.

THOSE FAVORING SUCH DEVELOPMENTS POINT OUT THAT AT THE STAGE OF A MAN'S RESIDENCY HE HAS REACHED A NEW LEVEL OF MATURITY, AND FOR THAT VERY REASON HE MAY THEN FOR THE FIRST TIME REALIZE HIS INTEREST IN RESEARCH AND BE THE MOST CAPABLE OF UNDERTAKING ADVANCED STUDY. IT IS SAID THAT IN THOSE SPECIALTIES WITH A PRESCRIBED RESIDENCY PERIOD OF THREE OR MORE YEARS IN LENGTH, THERE IS ADEQUATE TIME FOR A MAN TO ACCOMPLISH A STANDARD MASTERS DEGREE, WITHOUT IMPAIRING HIS CLINICAL TRAINING OR ENDANGERING HIS SUBSEQUENT ABILITY TO PASS HIS SPECIALTY BOARD EXAMINATIONS. IN FACT, MANY OF THE PROFESSIONAL CERTIFYING GROUPS INCLUDE RESEARCH ACTIVITY AMONG THEIR SPECIFIC REQUIREMENTS FOR THE RESIDENCY. PROPONENTS OF SUCH WORK, CLAIMING VOCIFEROUSLY THEIR DESIRE TO MAINTAIN THE HIGHEST OF GRADUATE STANDARDS AND THE FULL STRENGTH OF A SOLID MASTERS DEGREE, RECOGNIZE THE NECESSITY OF RELEASING A RESIDENT FROM ALL CLINICAL DUTIES FOR A PERIOD OF AT LEAST SIX MONTHS, DURING WHICH HE CAN ENTER A LABORATORY AND IN UNDISTURBED CONCENTRATION UNDERTAKE HIS THESIS RESEARCH. IT IS BELIEVED THAT SUPPORTING COURSE WORK AND OTHER REQUIREMENTS CAN BE ADEQUATELY MET IN ASSOCIATION WITH REGULAR CLINICAL COMMITMENTS.

IN SPITE OF THE ALMOST UNIVERSALLY RECOGNIZED NEED FOR THE PROMOTION OF EXPANDED PROGRAMS OF GRADUATE EDUCATION IN MEDICINE, THESE LINES OF REASONING CONCERNING THE RESIDENCY PERIOD MEET WITH A WIDE RANGE OF REACTIONS AMONG DIFFERENT INSTITUTIONS, AND EVEN WITHIN THE FACULTY OF ANY ONE GIVEN MEDICAL SCHOOL. ONCE AGAIN THE SUBJECT OF THE "DEGREEITIS" DISEASE IS RAISED. ONE OFTEN ENCOUNTERS THE REACTION THAT, OF COURSE, A RESIDENT IS A MAN OF MATURITY AND HE SHOULD BE DOING SOME RESEARCH AND ADVANCED STUDY SIMPLY AS A PART OF A GOOD CLINICAL RESIDENCY. WHY ATTACH GRADUATE COURSE NUMBERS AND A DEGREE TO WORK THAT IN ESSENCE HE SHOULD BE DOING ANYWAY? FURTHERMORE, THERE IS WIDESPREAD SKEPTICISM ABOUT WHETHER A RESIDENT WILL IN REALITY BE GIVEN ADEQUATE, UNDISTURBED TIME FOR RESEARCH. MANY PEOPLE VOICE THE OPINION THAT THE SIX MONTHS OF FREEDOM SO COMMONLY ADVOCATED FOR SUCH A PURPOSE IS INADEQUATE IN AMOUNT IN ANY EVENT.

SOME, PARTICULARLY IN THE BASIC SCIENCE FIELDS, STAND IN FUNDAMENTAL DISAGREEMENT WITH THE CLINICIANS ON MATTERS OF WHAT CONSTITUTES TRUE RESEARCH. HOLDING THAT DEGREES SHOULD BE RESTRICTED TO THE BASIC SCIENCE FIELDS, ONE EXTREME POSITION IS THAT REAL RESEARCH WITH PATIENTS IN THE CLINICAL FIELDS IS IMPOSSIBLE, SINCE A DOCTOR'S FIRST OBLIGATION MUST BY OATH BE TO THE WELFARE OF THE PATIENT AND CANNOT, AS IS PREREQUISITE IN RESEARCH, BE TO THE TRUTH. IF, SUCH A PERSON WOULD SAY, THE WORK IS TO BE DONE IN THE LABORATORY AND WITH ANIMALS, IT SHOULD BE IN THE APPROPRIATE BASIC SCIENCE DEPARTMENT ANYWAY. AS ONE GRADUATE DEAN COMMENTED: "I FEAR THE GENUINE UNDERSTANDING OF ORIGINAL SUBSTANTIVE RESEARCH ON THE PART OF MANY OF THE CLINICIANS WHO DIRECT A RESIDENT'S ACTIVITY. THEY SPOON FEED THEIR STUDENTS RATHER THAN MAKING THEM DIG ALONE, AND MANY OF THEM DON'T RECOGNIZE THAT REAL RESEARCH IS NOT JUST DEVISING A NEW WAY TO TIE OFF AN ARTERY!"

FUNDAMENTALLY A RESIDENT IS PUTTING THE FINAL HIGH POLISH ON HIS ABILITY TO BECOME A COMPETENT PRACTITIONER OF A SPECIALTY, AND, IT IS ARGUED, IT IS NEITHER PRACTICAL NOR WISE TO SIMULTANEOUSLY MIX THIS ACTIVITY WITH THE ACADEMIC AIMS OF TRUE GRADUATE EDUCATION. IF THE PURPOSE IS TO IMPLANT A GENUINE CONCERN FOR RESEARCH, AND IF A MAN IS REALLY INTERESTED IN MOVING IN THIS DIRECTION, A FULL YEAR OUT, EXCLUSIVELY IN THE GRADUATE SCHOOL, SHOULD NOT BE LOOKED UPON AS AN UNDESIRABLE DELAY, BUT RATHER AS A CHALLENGING OPPORTUNITY. THE VICE PRESIDENT FOR MEDICAL AFFAIRS OF ONE MAJOR UNIVERSITY OBSERVED DRYLY: "TO PROVIDE MASTER DEGREE PROGRAMS WITHIN THE NORMAL TIME FRAMEWORK OF THE RESIDENCY SIMPLY LEADS TO OFFERING ACADEMIC KENTUCKY COLONELCIES!"

DESPITE THE CONCERNS FOR THE FULL STRENGTH QUALITY OF GRADUATE DEGREES GAINED AS A PART OF THE RESIDENCY, A NUMBER OF PEOPLE FEEL THAT THIS IS TOO LATE IN A MAN'S CAREER TO BE TRYING TO INSTILL A DEEP AND SINCERE INTEREST IN RESEARCH AND THE ACADEMIC WAY OF LIFE. IT IS SAID THAT THE PRECLINICAL SCIENCES CALL FOR LEARNING, WHILE THE CLINICAL YEARS ARE TRAINING. THE TIME TO PROMOTE THE VIGOROUS INTELLECTUAL EXERCISE OF GRADUATE WORK IS AT A POINT MUCH EARLIER THAN THE RESIDENCY WHEN THE STUDENT IS STILL IN THE LEARNING FRAME OF MIND. TO ATTEMPT TO PICK UP A MASTERS DEGREE ON THE FINAL STRETCH OF THE ROAD TO CERTIFICATION AS A PRACTICING MEDICAL SPECIALIST IS, AS ONE GRADUATE DEAN DESCRIBES IT, "SIMPLY A FORM OF PROFESSIONAL EGOTISM."

CHARGE AND COUNTERCHARGE, ARGUMENT AND REBUTTAL, CAN BE HEARD AT GREAT LENGTH ON ALL OF THESE POINTS, WITH AN ALIGNMENT OF ABLE AND RESPECTED EDUCATORS ON BOTH SIDES. HERE IS ANOTHER INSTANCE IN WHICH NO ONE WANTS

TO DILUTE GRADUATE EDUCATION, BUT EVERYONE RECOGNIZES THE CLEAR CUT NEED FOR MORE OF IT.¹³ AGAIN WE HAVE NEED OF MORE ESTABLISHED FACT TO GO ON. ANALYTICAL STUDY, COUPLED WITH A BOTH TOLERANT AND PATIENT APPROACH TO UNDERSTANDING, IS SURELY CALLED FOR.

13. ALTHOUGH NO ATTEMPT TO ANALYZE THE MATTER WILL BE INCLUDED IN THIS REPORT, I WOULD CALL ATTENTION TO THE FACT THAT THERE IS A WIDELY RECOGNIZED AND SERIOUS PROBLEM IN THE AREA OF GRADUATE WORK IN NURSING. THERE IS AN EXTREME NATIONAL SHORTAGE BOTH OF PERSONS WITH ADVANCED TRAINING IN THIS AREA, AND SCHOOLS ADEQUATELY STAFFED TO PRODUCE MORE.

VII. OTHER PROBLEMS OF GRADUATE EDUCATION.

DURING CONFERENCES ON THE SEVERAL CAMPUSES I FOUND MYSELF DISCUSSING MANY OTHER PROBLEMS OF GRADUATE EDUCATION THAN THOSE THUS FAR REPORTED UPON. WHILE AN EXTENDED DISCUSSION OF ANY OF THEM IS NOT FEASIBLE WITHIN THE LIMITS OF THIS REPORT, SOME OF THEM SHOULD BE AT LEAST BRIEFLY NOTED.

(1) ONE MATTER OF WIDE AND SINCERE CONCERN HAS TO DO WITH THE CURRENT STATUS, AS WELL AS THE EVOLVING FUTURE, OF THE MASTERS DEGREE. IT IS EASY TO DISCERN THAT THIS FIRST GRADUATE DEGREE HAS TAKEN ON HIGHLY VARIABLE MEANING IN VARIOUS UNIVERSITIES AND REGIONS, AND EVEN AMONG DIFFERENT FIELDS WITHIN THE SAME INSTITUTION. IN SOME CIRCUMSTANCES IT CARRIES GENUINE STATURE AS A RESEARCH DEGREE, CALLS FOR FROM ONE TO TWO YEARS OF SOLID EFFORT, AND STANDS EITHER AS A VALID TERMINAL EFFORT IN ITSELF OR AS A FIRST FIRM STEP FORWARD TO A LATER DOCTORS DEGREE. IN OTHER CASES IT REPRESENTS LITTLE MORE THAN AN ADDITIONAL YEAR OF COURSE WORK, WITH NO THESIS OR SUBSTANTIVE RESEARCH REQUIRED. ALL TOO OFTEN IT HAS COME TO BE NOTHING BUT A "CONSOLATION PRIZE" WHICH, ALONG WITH THE STUDENT HOLDING IT, WAS THROWN OUT AN INSTITUTIONAL BACK DOOR IN EVIDENCE THAT THE INDIVIDUAL WAS INCAPABLE OF GOING ON TO THE PH.D. INDEED, IN MANY FIELDS AND FROM MANY INSTITUTIONS THE DEGREE HAS BEEN DEGRADED ALMOST TO THE LEVEL OF BEING AN ACADEMIC STIGMA.

THIS CONFUSION OF INCONSISTENCY, TO SAY NOTHING OF THE INVOLVEMENT OF LOW QUALITY, BECOMES A MATTER OF ESPECIALLY GRAVE CONCERN AS WE FACE UP TO DAYS IN WHICH THE GROWING SHORTAGE OF PERSONS WITH A DOCTORS DEGREE WILL FORCE UNIVERSITIES AND COLLEGES, AS WELL AS NON-ACADEMIC INSTITUTIONS, TO HIRE MORE AND MORE PEOPLE WITH LESSER CREDENTIALS. THERE IS AN URGENT PRESENT NEED FOR MORE NEARLY STANDARDIZING, AND IN MANY INSTANCES UPGRADING, THE QUALITY OF THE MASTERS DEGREE.

(2) ANOTHER AREA OF THOUGHTFUL INQUIRY AMONG PERSONS RESPONSIBLE FOR GRADUATE EDUCATION HAS TO DO WITH THE MORE ADEQUATE TRAINING OF COLLEGE TEACHERS. GRADUATE DEGREES HAVE BY TRADITION BEEN DEFINED AND DESIGNED AS RESEARCH DEGREES. A LARGE PROPORTION OF THE PERSONS EARNING THEM JOIN COLLEGE FACULTIES, AND THE PH.D. HAS BECOME A VIRTUALLY PREREQUISITE "UNION CARD" OF THE PROFESSOR IN A FIELD IN WHICH THE DEGREE IS GRANTED. THOUGH IT IS WIDELY ASSUMED THAT THESE RESEARCH-TRAINED INDIVIDUALS SOMEHOW LEARNED, INCIDENTALLY, HOW TO BE EFFECTIVE TEACHERS, IT IS, OF COURSE, ALL TOO OBVIOUS THAT MANY ACTUALLY HAVE NOT. AN INCREASING NUMBER OF INSTITUTIONS ARE NOW GRAPPLING WITH THE PROBLEM OF HOW THEY CAN IN VARIOUS WAYS SUPPLEMENT OR REVISE GRADUATE PROGRAMS TO GIVE STUDENTS BOTH THE TECHNIQUES OF RESEARCH AND THE ART OF TEACHING.

(3) I FOUND A POORLY DEFINED, BUT GENERALLY WIDESPREAD CONCERN, FOR THE BASIC ACADEMIC HEALTH OF THE SOCIAL SCIENCES AND THE HUMANITIES. ADMINISTRATORS AND FACULTY MEMBERS ALIKE RECOGNIZE THE DANGERS INHERENT IN THE UNBALANCED SUPPORT FOR RESEARCH AND CREATIVE SCHOLARLY ACTIVITY WHICH, AS THE RESULT OF THE PRESENT DAY EMPHASIS ON THE NATURAL SCIENCES, IS CREATING PRIVILEGED AND UNDERPRIVILEGED AREAS OF ENDEAVOR IN OUR UNIVERSITIES. BUT THE REAL CONCERNS FOR THE SOCIAL SCIENCES AND HUMANITIES

WOULD APPEAR TO BE JUSTIFIABLY BASED ON EVEN MORE FUNDAMENTAL MATTERS. PEOPLE SPEAK IN GRAVE TERMS OF "A CONSTIPATION OF IDEAS AND A DIARRHEA OF WORDS," AND SPECULATIVELY ASK AFTER THE WHEREABOUTS "OF THE ABLE YOUNG MEN WHO ONCE WENT INTO THESE FIELDS."

WHETHER A GENUINE DETERIORATION IN SCHOLARSHIP AND A DECLINE OF VIGOR AND PERCEPTION HAS IN FACT OCCURRED IN THE SOCIAL SCIENCES AND THE HUMANITIES OR NOT, IT IS SIGNIFICANT TO NOTE THAT MANY PEOPLE BELIEVE THIS TO BE THE CASE. INTERESTINGLY ENOUGH MEN IN THE NATURAL SCIENCES SEEM TO BE AT LEAST AS WORRIED ABOUT IT AS ANY OTHER SEGMENT OF THE ACADEMIC COMMUNITY. THE ONE HUNDRED MILLION DOLLAR INJECTION OF SUPPORT SPECIFICALLY CHanneled INTO THESE AREAS UNDER THE CANADA COUNCIL IN OUR NEIGHBOR NATION TO THE NORTH, GIVES EVIDENCE OF A SERIOUS-MINDED RECOGNITION OF THE SITUATION AS WELL AS A CONCRETE RESPONSE TO IT IN THAT COUNTRY.

(4) IN OVERALL RETROSPECT, I BELIEVE THAT THE PROBLEM WHICH STRIKES ME AS HAVING THE BROADEST AND MOST SIGNIFICANT IMPLICATIONS AMONG ALL OF THE MATTERS AFFECTING GRADUATE EDUCATION HAS TO DO WITH THE SCOPE OF OUR INSTITUTIONAL RESOURCES AND THE WISE AND EFFICIENT USE OF THEM. THE MASSIVE AID-TO-HIGHER-EDUCATION BILL NOW BEFORE CONGRESS, WOULD PROVIDE NEARLY SIXTY MILLION DOLLARS IN SUPPORT OF NEW GRADUATE PROGRAMS AND FACILITIES AS WELL AS THE EXTENSION OF OLD ONES. THIS IS BASED ON WHAT, AS A RESULT OF THIS TRIP, I AM CONVINCED IS A WHOLLY ERRONEOUS PRESUMPTION CONCERNING OUR EXISTING CAPACITIES TO HANDLE GRADUATE STUDENTS. I BELIEVE THAT A CAREFUL INVENTORY WOULD REVEAL THAT THE TOP FIFTY GRADUATE SCHOOLS OF THE COUNTRY COULD AS A GROUP, WITH REASONABLE DISTRIBUTIONS OF ENROLLMENT, DOUBLE THE NUMBER OF GRADUATE STUDENTS NOW CARRIED WITHOUT ANY MAJOR EXPANSIONS OF EITHER STAFF OR PHYSICAL EQUIPMENT.

TO BE SURE, THE GRADUATE SCHOOLS OF A HANDFUL OF "PRESTIGE" INSTITUTIONS HAVE REACHED OR EVEN EXCEEDED THE SATURATION POINT IN SOME FIELDS. THE UNIVERSITIES WITH BROADLY-ESTABLISHED AND SOUNDLY-OPERATED GRADUATE PROGRAMS IN WHICH THERE ARE ACTUAL SHORTAGES OF WELL-QUALIFIED ADVANCED STUDENTS IS FAR LARGER IN NUMBER. MUCH MORE TO THE POINT THAN A WHOLESALE EXPANSION OF OUR NATIONAL GRADUATE EDUCATION PLANT IS LOCATING AND RECRUITING A FAR HIGHER PERCENTAGE OF THE INTELLECTUALLY CAPABLE PEOPLE WHO CAN PROFIT BY ADVANCED WORK, AND THEN TO SEEK THEIR DISTRIBUTION ON A BASIS CONSISTENT WITH PRESENT, OR ONLY MODESTLY EXTENDED, INSTITUTIONAL CAPACITIES TO TRAIN THEM.

THE EXTREMELY UNEVEN USE NOW BEING MADE OF AVAILABLE FACILITIES HAS BEEN CONSIDERABLY AGGRAVATED BY MAJOR NATIONAL FELLOWSHIP PROGRAMS SUCH AS THE NATIONAL SCIENCE FOUNDATION AND THE FORD FOUNDATION'S WOODROW WILSON GRANTS. UNDER THE TERMS OF THESE FELLOWSHIPS, THE RECIPIENTS HAVE RATHER GENERALLY UNRESTRICTED FREEDOM OF CHOICE REGARDING THE INSTITUTION THEY WILL ATTEND. THE GENERALLY UNADVISED, OR EVEN ILL ADVISED, STUDENT HAVING HEARD OF CERTAIN INTERNATIONALLY KNOWN SCHOLARS IN GIVEN UNIVERSITIES, AND WISHING TO MAKE THE MOST OF HIS AVAILABLE OPPORTUNITY TO OBTAIN WHAT HE BELIEVES WILL BE A "PRESTIGE" DEGREE FROM A FAMOUS INSTITUTION, IS PRONE TO SELECT ONE OR THE OTHER OF FIVE OR SIX "NAME" SCHOOLS.¹⁴ HE DOES NOT REALIZE THAT WHEN HE ARRIVES ON THE CAMPUS HE MAY WELL BE CAUGHT UP IN A STUDENT CROWD THAT WILL MAKE IT IMPOSSIBLE FOR HIM TO ESTABLISH THOSE HIGHLY INDIVIDUALIZED AND PERSONAL RELATIONSHIPS WITH

14. IT IS TRUE THAT AN ATTEMPT HAS BEEN MADE BY THE WOODROW WILSON GROUP TO ESTABLISH SOME BROAD LIMITATIONS ON THE NUMBERS OF STUDENTS WHO CAN SELECT ANY ONE GIVEN INSTITUTION, BUT STILL THE PERMITTED CONCENTRATIONS ARE VERY STRONG, INDEED.

THE STAFF WHICH ARE SUCH AN IMPORTANT PART OF GRADUATE LIFE. HE MAY EVEN HAVE VIRTUALLY NO CONTACT WITH THE BIG NAMES HE SO ZEALOUSLY SOUGHT.

ANOTHER ELEMENT WHICH GIVES CAUSE FOR GENERAL ALARM, IS THAT THESE NATIONAL FELLOWSHIP PROGRAMS ARE NOW LARGE ENOUGH TO BE EFFECTIVE IN REMOVING A VERY SUBSTANTIAL PROPORTION OF THE CREAM FROM THE TOP OF THE NATIONAL BOWL. THUS, NOT ONLY DO THE PROGRAMS CONTRIBUTE TO THE GENERAL PILE-UP OF GRADUATE STUDENTS IN A SMALL NUMBER OF PLACES, BUT THEY TEND TO CONCENTRATE MOST OF THE BEST STUDENTS IN JUST A FEW GRADUATE SCHOOLS. A PERHAPS EXTREME, BUT ALL TOO MEANINGFUL OBSERVATION OF ONE DEAN OF A STRONG GRADUATE COLLEGE, IS THAT THROUGH "THESE FELLOWSHIP PROGRAMS THE NATIONAL SCIENCE AND FORD FOUNDATIONS HAVE ASSUMED THE POWER TO FOSTER OR VIRTUALLY DESTROY AN INDIVIDUAL GRADUATE SCHOOL." IN ANY EVENT THERE IS CAUSE FOR WORRY AS THE STRONG BECOME PROGRESSIVELY STRONGER AND THE WEAK GROW WEAKER.

THE FELLOWSHIP PROBLEM DOES NOT LEND ITSELF TO SIMPLE SOLUTION, BUT IT IS SUFFICIENTLY SERIOUS TO CALL FOR POSITIVE AND IMMEDIATE STUDY AND ACTION. IT IS NOT DIFFICULT TO DEMONSTRATE THAT GRADUATE EDUCATION IS A NATIONAL AND NOT A STATE OR LOCAL CONCERN. AID FROM LARGE FOUNDATIONS AND THE FEDERAL GOVERNMENT IN SUPPORT BOTH OF STUDENTS AND INSTITUTIONS IS NOT ONLY APPROPRIATE BUT CLEARLY NEEDED. ONE WONDERS, HOWEVER, IF THE FELLOWSHIP MONEY SHOULD NOT BE MADE PROPORTIONALLY AVAILABLE TO GRADUATE SCHOOLS FOR COMPETITIVE DISTRIBUTION AMONG THE STUDENTS WHICH THEY NORMALLY RECEIVE, RATHER THAN DIRECTLY TO THE STUDENTS WHO MAY THEN SELECT THE INSTITUTIONS THEY WILL ATTEND. THIS WOULD, OF COURSE, NOT FULLY SOLVE THE SITUATION, BUT IT WOULD RETARD FURTHER DETERIORATION.

INsofar AS FEDERAL OR FOUNDATION AID TO INSTITUTIONS IS CONCERNED, AS HAS ALREADY BEEN NOTED, THE GRAVE NEED IN MY OPINION IS THE

STABILIZATION AND STRENGTHENING OF GRADUATE EFFORTS ALREADY IN EXISTENCE, RATHER THAN THE WIDESPREAD PROMOTION OF NEW ACTIVITIES. AS THE LARGE AND FINANCIALLY STRONG SCHOOLS GROW LARGER AND NEED MORE STAFF, THEY DRAW THE BEST INDIVIDUALS THEY CAN FIND AWAY FROM THE SMALLER AND MORE MODESTLY SUPPORTED INSTITUTIONS. NOT HAVING THE FINANCIAL RESOURCES TO HOLD THEIR TOP PEOPLE IN THIS FRANTIC COMPETITION FOR TALENT IN A MARKET OF SHORT SUPPLY, THE ACADEMIC STRENGTH OF THE WEAKER INSTITUTIONS GROW STEADILY WEAKER AND THE NUMBERS OF GRADUATE STUDENTS THEY CAN ATTRACT PROGRESSIVELY DWINDLES. THE LONG RANGE RESULT IS ALL TOO EASY TO ENVISION.

SURELY THE LAST THING THE INSTITUTION OF TRADITIONALLY GOOD QUALITY BUT MODEST RESOURCES SHOULD BE ENCOURAGED TO DO IN THIS SORT OF ENVIRONMENT, IS TO FURTHER EXTEND ITS OPERATIONS. SCHOOLS SUCH AS THE UNIVERSITY OF NEBRASKA, AS I SEE IT, NEED TO BRING ALL AVAILABLE RESOURCES TO BEAR ON MAINTAINING QUALITY IN THE AREAS THEY HAVE ALREADY CHOSEN TO DEVELOP. OUTSIDE SUPPORT FROM THE AID BILL NOW BEFORE CONGRESS WOULD REQUIRE THE INSTITUTION TO EMBRACE ADDITIONAL OPERATIONS. THIS WILL ONLY THIN OUT EXISTING RESOURCES AND RESULT ULTIMATELY IN MEDIOCRITY, OR LESS, THROUGHOUT THE UNIVERSITY.

THE ALREADY LARGE AND RICH UNIVERSITIES HAVE, WHETHER THEY FULLY RECOGNIZE IT OR NOT, A VITAL STAKE IN THE WELL BEING OF THE SMALLER AND LESS WEALTHY INSTITUTIONS. UNIVERSITIES SUCH AS NEBRASKA, NORTH CAROLINA, TULANE OR OREGON HAVE AN IMPORTANT ROLE TO PLAY IN THE TOTAL NATIONAL EFFORT IN GRADUATE EDUCATION, IF ONLY THEY CAN BE GIVEN WELL-DIRECTED AID IN THE ACCOMPLISHMENT OF THEIR MISSION. WE SHOULD ENCOURAGE THEM TO BE, AS THEY HAVE IN THE PAST SOUGHT TO BE, STRONG IN SPECIALTIES OF THEIR OWN SELECTION, AND THEN SEE THAT THEIR THOUGHTFULLY DEVELOPED CAPABILITIES

ARE FULLY UTILIZED, RATHER THAN SEEKING TO PROMOTE THE INDEFINITE EXPANSION OF A FEW FAMOUS GRADUATE CENTERS OR THE COSTLY CREATION OF A NEW ARRAY OF COMPETING ONES IN COLLEGES NOT NOW IN THE BUSINESS AT ALL. MANY A RESPECTED GRADUATE SCHOOL IS IN A FIGHT AS URGENT AS SURVIVAL ITSELF, AND WE CANNOT AFFORD TO LET THEM LOSE THE STRUGGLE.

VIII. THE RISE AND INFLUENCE OF SPONSORED RESEARCH.

BECAUSE OF MY RESPONSIBILITIES AS RESEARCH ADMINISTRATOR AT THE UNIVERSITY OF NEBRASKA, AND BECAUSE THE OUTSIDE FUNDS RECEIVED BY AN INSTITUTION IN SUPPORT OF RESEARCH BRING INFLUENCES THAT TOUCH GRADUATE EDUCATION AT A NUMBER OF SIGNIFICANT POINTS, I SPENT CONSIDERABLE TIME DURING MY TRAVELS IN DISCUSSING A WHOLE COMPLEX OF QUESTIONS ASSOCIATED WITH THE NATURE AND LONG RANGE IMPLICATIONS OF SPONSORED RESEARCH. THIS RAPIDLY GROWING MONSTER HAS, IN ANYTHING APPROACHING ITS PRESENT SIZE, ONLY RECENTLY COME IN THE BACK DOOR TO TAKE UP LODGING IN OUR ACADEMIC MIDST. AT SOME OF THE INSTITUTIONS VISITED THE MAGNITUDE OF THE INVOLVEMENT IS KNOWN TO BE TRULY COLOSSAL; IN OTHERS IT IS NOT EVEN ADEQUATELY MEASURED. SIGNIFICANTLY, HOWEVER, ALMOST EVERYWHERE PEOPLE FIND THEMSELVES MADE SOMEWHAT UNEASY BY ITS SPRAWLING PRESENCE.

PERHAPS THE PREVAILING STATE OF APPREHENSION DERIVES IN THE FIRST INSTANCE FROM THE FACT THAT THE CREATURE IS BY SIZE SO COSMIC, AND BY MOVEMENT AND GROWTH SO SUBTLE AND PERSISTENT, THAT IT IS EXTREMELY DIFFICULT FOR ONE TO GET HIS HANDS ON IT. ONE THING IS SURE. IT HAS COME TO INVOLVE A WHOLE NEW WAY OF ACADEMIC LIFE, AND ALTHOUGH IT HAS FAR TOO MANY IMPLICATIONS TO PERMIT THE GENERALIZATION THAT IT IS EITHER "GOOD"

OR "BAD," IT HAS HAD STAGGERING IMPACT AND IS BRINGING ENORMOUS CHANGE. DEEP CONCERN UNDOUBTEDLY ALSO ARISES FROM FEELINGS OF JUST SHEER HELPLESSNESS IN THE FACE OF INEXORABLE FORCES THAT SEEM TO BE SWEEPING OUR INSTITUTIONS ALONG IN A TRANSFORMING TIDE OVER WHICH NO ONE HAS MEASURABLE INFLUENCE, LET ALONE EFFECTIVE CONTROL.

MORE THAN ONE PERSON HAS WITH SOME REASON OBSERVED THAT UNDER THE INFLUENCE OF MASSIVE FEDERAL GRANTS MADE IN INTIMATE RESPONSE TO NATIONAL NECESSITY, THE RUSSIANS ARE DOING MORE TO SHAPE OUR UNIVERSITIES THAN WE ARE. IN ANY EVENT, WE HAVE BEEN CAUGHT UP IN WHAT HAS OVERTONES OF A TREMENDOUS ACADEMIC W.P.A. OF GOVERNMENT SPENDING FOR RESEARCH AND DEVELOPMENT, AND AS BERTRAND RUSSELL ONCE OBSERVED IN ANOTHER CONNECTION, "THE BATH WATER IS BEING WARMED UP SO GRADUALLY BUT STEADILY THAT ONE FINDS IT HARD TO KNOW WHEN TO SCREAM!".

IT DOES NOT CALL FOR ANY COMPLICATED REASONING TO DEMONSTRATE THAT, FOR GOOD OR ILL, MAJOR FEDERAL AID TO HIGHER EDUCATION HAS NOW LONG SINCE COME TO PASS. ALONG WITH TEACHING AND PUBLIC SERVICE, RESEARCH HAS TRADITIONALLY BEEN ACCEPTED AS ONE OF THE THREE PRIMARY OBLIGATIONS OF A UNIVERSITY AND ITS STAFF. NOT ONLY DOES THIS COMMITMENT GROW OUT OF THE ACADEMIC VALUES INHERENT IN RESEARCH ITSELF, BUT ALSO FROM THE FACT THAT EFFECTIVE TEACHING AND PUBLIC SERVICE ARE INDISPENSIBLY GROUNDED IN RESEARCH AND CREATIVE SCHOLARLY WORK. ACCORDING TO RECENTLY RELEASED DATA FROM THE NATIONAL SCIENCE FOUNDATION, TWO-THIRDS OF ALL RESEARCH EXPENDITURES IN OUR AMERICAN INSTITUTIONS OF HIGHER LEARNING THIS PAST YEAR CAME THROUGH FEDERAL GRANTS AND CONTRACTS. THE UTTER DEPENDENCE OF OUR UNIVERSITIES ON SUCH GOVERNMENTAL AID IS NOW AN ESTABLISHED CONDITION, NO LONGER A THEORY.

DURING THE YEAR 1940, THE FEDERAL GOVERNMENT PROVIDED A TOTAL OF FIFTEEN MILLION DOLLARS TO THE COLLEGES AND UNIVERSITIES OF THE COUNTRY AT LARGE FOR RESEARCH AND DEVELOPMENT. ALMOST EXCLUSIVELY THIS WAS IN THE FORM OF TRADITIONAL SUPPORT TO THE AGRICULTURAL EXPERIMENT STATIONS OF THE NATION'S LAND GRANT INSTITUTIONS. LESS THAN TWO DECADES LATER, IN THE FISCAL YEAR JUST CONCLUDED, JULY 1, 1957 TO JUNE 30, 1958, FEDERAL AGENCIES SPENT \$440,000,000 FOR RESEARCH IN OUR COLLEGES AND UNIVERSITIES, AND THIS WAS SPREAD ACROSS ALMOST THE ENTIRE ACADEMIC SPECTRUM. ACCORDING TO THE NATIONAL SCIENCE FOUNDATION THE GOVERNMENT RESEARCH DOLLAR OF 1957-1958 WAS DIVIDED AS FOLLOWS:

BIOLOGICAL SCIENCES	- 8 CENTS
MEDICAL SCIENCES	- 17 CENTS
AGRICULTURAL SCIENCES	- 6 CENTS
PHYSICAL SCIENCES	- 21 CENTS
ENGINEERING SCIENCES	- 43 CENTS
SOCIAL SCIENCES	- 5 CENTS

IT IS WIDELY AGREED THAT IN VIEW OF THE CONTINUING AND MULTIPLYING RESEARCH NEEDS OF OUR NATION AND SOCIETY, THIS PATTERN OF DEVELOPMENT IN FEDERAL SUPPORT OF UNIVERSITY RESEARCH WILL CONTINUE TO GROW, AND PROBABLY AT AN ACCELERATED PACE.

THERE CAN BE LITTLE ARGUMENT THAT OUR INSTITUTIONS NEED THIS MONEY, AND THAT ITS AVAILABILITY IS IN FACT ADDING GREAT STRENGTH TO THEIR GENERAL OPERATIONS. HEREIN LIES THE DIRECT SUPPORT OF A MAJOR PROPORTION OF THE RESEARCH OF THE FACULTY. THIS IS SCHOLARLY ENDEAVOR OF A TYPE WHICH BY AND LARGE A UNIVERSITY WISHES ITS STAFF MEMBERS TO ENGAGE IN, AND THE OPPORTUNITY FOR WHICH IS AN ESSENTIAL INGREDIENT OF A GIVEN

ACADEMIC ENVIRONMENT IF STAFF MORALE IS TO BE HIGH AND INDIVIDUAL FACULTY MEMBERS ARE TO BE CONTENT TO REMAIN IN THEIR POSITIONS. THESE SOURCES ALSO PROVIDE MUCH OF THE EXPENSIVE EQUIPMENT AND MANY OF THE PHYSICAL FACILITIES WHICH THE UNIVERSITY NEEDS AND WOULD HAVE NO OTHER WAY OF OBTAINING. HERE TOO IS MUCH OF THE SUPPORT AND STRENGTH OF MODERN GRADUATE EDUCATION, NOT ONLY IN THE FORM OF ASSISTANTSHIPS AND FELLOWSHIPS, BUT ALSO IN THE VITAL AND DIVERSIFIED BACKDROP OF STAFF RESEARCH INTO WHICH THE STUDENTS CAN MESH THEIR OWN ACTIVITIES.

FOR ALL OF THESE OBVIOUS ADVANTAGES, HOWEVER, THE PRESENCE OF THIS VAST INVOLVEMENT IN GOVERNMENT-SPONSORED RESEARCH IS NOT A COMPLETELY UNALLOYED BLESSING. THERE IS REASON FOR THOUGHTFUL CAUTION AND WARY APPRAISAL OF THE EFFECTS WHICH THIS IS HAVING ON THE OVERALL ACADEMIC EFFORT. WE MUST REMEMBER, AS A RECENT NATIONAL SCIENCE FOUNDATION STUDY RIGHTLY EMPHASIZES, THAT WHILE THE FEDERAL AGENCIES WITH THE RESEARCH AND DEVELOPMENT MONEY TO SPEND, AND THE UNIVERSITIES THAT ARE ACCEPTING IT, ARE BOTH TRYING TO OPERATE IN THE PUBLIC INTEREST, AND THAT WHILE THEY DO HAVE SOME OBJECTIVES IN COMMON, EACH GROUP OPERATES IN A DIFFERENT AREA OF THAT INTEREST, AND EACH HOLDS ITS OWN DISTINCTIVE OBJECTIVES THAT IN MANY INSTANCES ARE ANYTHING BUT THE SAME, OR EVEN COMPATIBLE. IT MAKES ONLY COMMON SENSE TO BE WATCHFUL WHEN NON-UNIVERSITY AGENCIES, WHOSE GOALS ARE OF NECESSITY NOT COINCIDENT WITH OUR OWN, COME, THROUGH THE AVAILABILITY OF NEEDED FUNDS, INTO A POSITION TO INFLUENCE AND ESTABLISH DIRECTION OF EMPHASIS WITHIN SUCH BASIC UNIVERSITY FUNCTIONS AS RESEARCH AND GRADUATE EDUCATION.

CERTAINLY NO ATTEMPT CAN BE MADE HERE TO EXPLORE ALL OF THE TANGLED AND CRISSCROSSING AVENUES OF CONCERN WHICH LEAD OUT FROM THIS CENTRAL

PROBLEM, BUT A SELECTION OF THEM WILL, WITHOUT DETAILED ELABORATION, BE GIVEN BRIEF MENTION. AS EVERY COLLEGE ADMINISTRATOR WELL KNOWS, IT COSTS MONEY TO ACCEPT MONEY. ONE VITAL MATTER TO CONSIDER, AS SPONSORED RESEARCH GRANTS MUSHROOM IN NUMBER AND SIZE, IS HOW FAR IS IT FEASIBLE TO LET SUCH DEVELOPMENTS GO BEFORE THE POINT IS REACHED WHERE FURTHER EXPANSION IS MORE EXPENSIVE THAN INSTITUTIONAL RESOURCES CAN AFFORD? ACCURATE AND TRUSTWORTHY MEASURING STICKS ARE DIFFICULT TO ESTABLISH IN THIS CONNECTION. IN SPITE OF ALL OF THE NEGOTIATIONS THAT HAVE BEEN CARRIED ON OVER RECENT YEARS, A MAJORITY OF UNIVERSITIES STILL APPEAR TO FEEL THAT THE INDIRECT COSTS OF GOVERNMENT SPONSORED RESEARCH ARE NOT ADEQUATELY COVERED BY THE VARIOUSLY COMPUTED OVERHEAD ALLOWANCES WHICH THE INSTITUTIONS ARE PERMITTED TO CHARGE.

THE COSTS OF HOUSING AND BEING ACCOUNTABLE FOR THIS CONSTANTLY BURGEONING RESEARCH DEVELOPMENT HAVE BECOME VERY GREAT. THE PRESIDENT OF ONE MAJOR UNIVERSITY VISITED MADE THE REVEALING, YET NOT UNREPRESENTATIVE, OBSERVATION THAT HIS INSTITUTION HAD APPROXIMATELY DOUBLED ITS TOTAL FLOOR SPACE WITH NEW BUILDING SINCE THE BEGINNING OF THE WAR, BUT THAT AS OF THE PRESENT MOMENT THERE WERE NO MORE SQUARE FEET DEVOTED TO THE TEACHING FUNCTIONS OF THE SCHOOL THAN THERE HAD BEEN IN 1940. HIS FEELING WAS THAT FEDERAL AID TO EDUCATION WOULD BE SUFFICIENT IF THE GOVERNMENT AGENCIES FOSTERING RESEARCH WOULD SIMPLY PAY THE ACTUAL COSTS WHICH THEIR WORK IS BRINGING TO THE SEVERAL INSTITUTIONS!

THE ADMINISTRATORS OF MOST OF THE UNIVERSITIES ARE QUICK TO CONCEDE THAT WHILE SPONSORED RESEARCH IS PUTTING A NEW AND SUBSTANTIAL DRAIN ON GENERAL OPERATING FUNDS, IT HAS SO FAR BROUGHT BENEFITS THAT MORE THAN JUSTIFY THE OVERALL COSTS OF THE INVOLVEMENT. NONETHELESS, THE SIZE OF

THE VENTURE CONTINUES TO INCREASE, AND IT IS MORE AND MORE WIDELY RECOGNIZED THAT INEVITABLY THAT CRITICAL POINT WILL BE ATTAINED AT WHICH ANY GIVEN INSTITUTION MUST CONCEDE THAT IT HAS REACHED A POINT OF SATURATION BEYOND WHICH IT IS UNWISE FOR IT TO GO. THE PROBLEM OF WEIGHING ADVANTAGES AGAINST DISADVANTAGES AND RESOURCES AGAINST COSTS IS DIFFICULT TO ASSESS SIMPLY BECAUSE MOST INSTITUTIONS HAVE NOT DEVELOPED VALID DETERMINING CRITERIA.

ANOTHER POINT OF GENERAL CONCERN ASSOCIATED WITH THE BROAD DEVELOPMENT OF SPONSORED RESEARCH IS THE MANNER IN WHICH IT TENDS TO THROW SOME SEGMENTS OF THE ACADEMIC ENTERPRISE OUT OF BALANCE WITH OTHERS. AN EDUCATIONAL INSTITUTION IS UNDER OBLIGATION TO MAINTAIN STRENGTH OF SCHOLARSHIP IN ALL OF THE INTELLECTUAL FIELDS IT SEEKS TO COVER, THE SOCIAL SCIENCES AND THE HUMANITIES NO LESS THAN THE NATURAL SCIENCES. BECAUSE THEIR OBJECTIVES ARE PARTICULAR AND LEGITIMATELY DIFFERENT FROM THOSE OF A UNIVERSITY, THE GOVERNMENT AGENCIES HAVE PLACED 95% OF THE NEARLY HALF A BILLION DOLLARS OF RESEARCH MONEY GIVEN UNIVERSITIES IN THE NATURAL SCIENCES. THIS PRESENTS THE UNIVERSITY WITH SOME EXTREMELY FUNDAMENTAL PROBLEMS IN PROVIDING EQUALITY OF OPPORTUNITY AND SOUND MORALE THROUGHOUT ITS OPERATIONS. SIGNIFICANTLY AND FORTUNATELY THE MEN IN THE NATURAL SCIENCES ARE AS WORRIED ABOUT THE "HAVE NOT" AREAS OF THE ACADEMIC SCENE AS ANYONE, BUT THE MAINTENANCE OF PROPERLY SUPPORTED HEALTH AND WELL BEING IN THE SOCIAL SCIENCES AND HUMANITIES, IN THE PRESENCE OF THE POWERFUL WEIGHT THAT HAS BEEN THROWN INTO THE SCALES ON THE SIDE OF SCIENCE AND TECHNOLOGY, IS A TROUBLESOME AND DIFFICULT MATTER.

UNHAPPILY THIS GROWING STATE OF INBALANCE IS, AT LEAST POTENTIALLY, EVEN MORE SEVERE THAN IT APPEARS ON THE SURFACE TO BE. IF, AS IS SO WIDELY

CLAIMED, THE GOVERNMENT RESEARCH GRANTS DO NOT CARRY SUFFICIENT OVERHEAD TO PAY THE COSTS INCURRED BY THE UNIVERSITY IN HANDLING THEM, AND THE INSTITUTION IS THEREFORE FORCED TO DIP INTO ITS BASIC OPERATING FUNDS TO MAKE UP THE DIFFERENCES, THOSE AREAS WHICH HAVE NO DIRECT OUTSIDE SUPPORT STAND TO LOSE A SECOND TIME AROUND. IT WAS IN RECOGNITION OF THESE VERY PROBLEMS THAT THE CANADIAN GOVERNMENT MADE A MAJOR APPROPRIATION DESIGNED TO GIVE COMPENSATORY AID TO THE NON-SCIENCE DIVISIONS OF THEIR UNIVERSITIES. ONE IS STRONGLY TEMPTED TO BELIEVE THAT OUR OWN FEDERAL CONGRESS SHOULD GIVE CONSIDERATION TO THE SAME PROPOSITION.

ASIDE FROM THE TYPES OF FINANCIAL PROBLEMS NOTED ABOVE, THERE ARE A NUMBER OF OTHER QUESTIONS RAISED BY OUR SPONSORED RESEARCH ACTIVITIES. ONE CONCERN CENTERS AROUND THE EFFECT OF THESE FUNDS ON THE FACULTY. A UNIVERSITY IS ANXIOUS TO HAVE A STAFF MEMBER PURSUE THOSE BASIC LINES OF SCHOLARLY INQUIRY WHICH ARE STRICTLY OF HIS OWN CHOOSING. NO DEAN OR OTHER ACADEMIC ADMINISTRATIVE OFFICER WOULD THINK OF TELLING A MEMBER OF FACULTY WHAT SPECIFIC PROGRAM OF RESEARCH HE SHOULD UNDERTAKE. YET, WITH MONEY TO OFFER IN SUPPORT OF SOME LINES OF INVESTIGATION AND NOT OTHERS, GOVERNMENT AGENCIES ARE IN A POSITION TO WIELD A POWERFUL AND DANGEROUS INFLUENCE IN "DIRECTING" THE RESEARCH ACTIVITIES OF MANY OF OUR SCHOLARS. AND NOT ONLY DO WE HAVE REASON TO VIEW THIS POSSIBILITY DIMLY, BUT NEED WE NOT ALSO BE WATCHFUL LEST THE IMMEDIATE PRACTICAL ENDS OF THOSE IN A POSITION TO MAKE GRANTS OF MONEY DO NOT TOO OFTEN DIVERT MANY OF OUR ABLE SCIENTISTS AND TECHNOLOGISTS INTO ROUTINE PROGRAMS OF TESTING, WHEN BY INCLINATION AND ABILITY THESE MEN ARE EQUIPPED TO DO, AND BY DEFINITION OF THE UNIVERSITY IDEA SHOULD DO, FUNDAMENTAL RESEARCH?

THEN TOO IN THE RELATIONS OF SPONSORED RESEARCH TO GRADUATE EDUCATION THERE ARE A GROUP OF INTERRELATED MATTERS THAT MUST NOT BE OVERLOOKED OR MINIMIZED IN IMPORTANCE. GRANTS COMMONLY CARRY PROVISIONS FOR RESEARCH ASSISTANTSHIPS WHICH CAN BE MADE AVAILABLE TO GRADUATE STUDENTS, USUALLY ON THE BASIS OF PART-TIME EMPLOYMENT. THE POSITIVE VALUES OF THESE ARE OBVIOUS ENOUGH. IN MANY INSTANCES THEY REPRESENT THE FINANCIAL SUPPORT WHICH MAKES IT POSSIBLE FOR AN ABLE STUDENT TO BE IN THE GRADUATE SCHOOL. BEYOND THAT, THE CLOSE WORKING INVOLVEMENT OF SUCH A PERSON IN THE RESEARCH PROGRAM OF A MATURE SCHOLAR OF THE FACULTY, HAS CLEARLY DISCERNABLE VALUES FOR THE STUDENT BEING TRAINED FOR INVESTIGATIVE WORK.

BUT THERE ARE NEGATIVE FORCES AT WORK IN THE SITUATION TOO. AN ESSENTIAL FEATURE OF LEARNING IN RESEARCH IS EXPERIENCE IN FINDING AND DELIMITING A PROBLEM, AND THEN IN PREPARING AN EFFECTIVE DESIGN FOR ITS SOLUTION. ALL TOO OFTEN, IN AID OF A FACULTY MEMBER WITH A BROAD SPONSORED RESEARCH COMMITMENT TO MEET, STUDENTS ARE PERMITTED TO SATISFY THEIR THESIS REQUIREMENT WITH THE RESULTS OF WORK DONE AS AN ASSISTANT ON A CONFINED SEGMENT OF A LARGE ON-GOING PROJECT. THIS CAN UNFORTUNATELY ROB THE STUDENT OF THE INDEPENDENT SELECTION OF HIS OWN RESEARCH PROBLEM. HE MAY WELL HAVE BEEN DRAWN INTO THE PROBLEM PRIMARILY BECAUSE OF THE AVAILABILITY OF FINANCIAL SUPPORT IN THE FIRST PLACE, AND HE MAY HAVE HAD VERY LITTLE TO DO WITH THE DEFINITION OF THE PROBLEM AND THE BASIC APPROACH TO ITS SOLUTION IN THE SECOND. GRADUATE STUDENTS, LIKE STAFF, SHOULD CERTAINLY NOT BE "DIRECTED" INTO THEIR SPECIFIC LINES OF RESEARCH ACTIVITY BY MONETARY INDUCEMENT.

THE DANGERS INHERENT IN THE SITUATION SO FAR AS THE GRADUATE STUDENT IS CONCERNED DO NOT END THERE. THE EVER PRESENT POSSIBILITY EXISTS THAT

WHEN A GOOD STUDENT IS CAUGHT UP IN ONE PHASE OF A MAJOR RESEARCH RESPONSIBILITY OF HIS PROFESSOR, HE MAY EASILY BECOME INVOLVED IN ATTEMPTING TO ACHIEVE MORE EXTENSIVE RESULTS THAN A LEGITIMATE THESIS WOULD REQUIRE. THIS POSSIBILITY, COUPLED WITH THE FACT THAT HE MAY WELL HAVE BECOME SO VALUABLE AN ASSISTANT THAT THE FACULTY INVESTIGATOR WILL BE HEAVILY MOTIVATED TO RETAIN HIS SERVICES, OFTEN RESULTS IN STUDENTS TAKING FAR TOO LONG TO COMPLETE THEIR DEGREES. CORROBORATING TESTIMONY ON THE TOO WIDESPREAD EXISTENCE OF SUCH UNDESIRABLE CIRCUMSTANCES IS NOT DIFFICULT TO OBTAIN.

STILL OTHER PROBLEMS HAVE APPEARED IN ASSOCIATION WITH THE RISE OF "TEAM RESEARCH" ON LARGE GRANTS, OR INTERLOCKING GROUPS OF GRANTS. RESEARCH HAS LONG BEEN DEFINED AS AN ESSENTIALLY LONELY AND HIGHLY INDIVIDUALIZED ENDEAVOR. MANY OF THESE SPONSORED RESEARCH ARRANGEMENTS ARE SO COMPLEX AND BROADLY CONCEIVED, HOWEVER, THAT THEY CALL FOR LARGE NUMBERS OF INDIVIDUALS WORKING IN INTIMATELY COOPERATIVE RELATION ONE WITH THE OTHER. WHILE SUCH PROCEDURE MAY BE BOTH EFFICIENT AND NECESSARY IN CERTAIN KINDS OF ON-THE-JOB SITUATIONS, IT IS TO BE QUESTIONED WHETHER IT REPRESENTS A DESIRABLE ENVIRONMENT IN WHICH TO PREPARE A GRADUATE STUDENT PROPERLY FOR A SELF-DEPENDENT CAREER IN RESEARCH AND THE PURSUIT OF BASIC SCHOLARSHIP.

INDEED, THE GENERALIZATION MIGHT BE HAZARDED THAT THE PRESENT RAPID GROWTH OF THE POST-DOCTORAL FELLOWSHIP IDEA IS, AT LEAST IN PART, A DIRECT RESULT OF MANY OF OUR PH.D.S HAVING BEEN TRAINED IN TOO-LARGE GROUPS, IN OVEREXTENDED GRADUATE DEPARTMENTS, AND UNDER "TEAM RESEARCH" CIRCUMSTANCES. HAVING FAILED PROPERLY TO ACHIEVE THE PURPOSES OF A DOCTORS DEGREE IN GAINING THE UNDERSTANDING AND MATURITY TO UNDERTAKE

INDEPENDENT RESEARCH, THEY ARE COMPELLED TO RETURN TO AN ACADEMIC SETTING TO LEARN WHAT THEY SHOULD HAVE LEARNED BEFORE THEIR DEGREE WAS GRANTED. MASS EDUCATION AT THE GRADUATE LEVEL, SUCH AS IS BEING ATTEMPTED IN SOME MAJOR INSTITUTIONS HEAVILY INVOLVED IN SPONSORED RESEARCH, SIMPLY BY DEFINITION DOES NOT WORK.

THERE IS YET ANOTHER ELEMENT IN THIS SITUATION WHICH IS A MATTER OF INEVITABLE CONCERN. AT BEST WE HAVE ONLY A LIMITED NUMBER OF MEN OF HIGH LEVEL CREATIVE TALENT IN THE SCIENCES AND TECHNOLOGIC ARTS. BECAUSE A LARGE PROPORTION OF THIS GROUP IS TO BE FOUND ON UNIVERSITY FACULTIES, THE GOVERNMENT AND OTHER NON-ACADEMIC AGENCIES ARE SEEKING TO JOB OUT THEIR EVER INCREASING NUMBERS OF PROBLEMS TO THE ACADEMIC ESTABLISHMENT. WHILE FACULTY PEOPLE ARE ENCOURAGED TO ENGAGE IN RESEARCH, THEY ALSO HAVE THEIR PRIMARY COMMITMENT TO TEACHING AND THE TRAINING OF THE PROFESSIONALS WHO ARE DESPERATELY NEEDED IN ENLARGED NUMBERS TO MEET THE DEMANDS THAT LIE AHEAD.

IF THE ABLE RESEARCH PEOPLE OF OUR UNIVERSITIES BECOME SO ENCUMBERED WITH SPECIFIC PROJECT WORK THAT THEY ARE LARGELY UNAVAILABLE TO STUDENTS, NO MATTER HOW IMPORTANT AND URGENT THE INVESTIGATION IN QUESTION MAY SEEM TO BE, A REAL QUESTION OF THE LONG RUN NATIONAL INTEREST IS CLEARLY INVOLVED. MANY AN OUTSTANDING TEACHER IS FAILING TO PLANT THE INVALUABLE SEED CORN FOR ANOTHER GENERATION, SIMPLY BECAUSE SOME GOVERNMENT AGENCY THOUGHT THAT HIS RESEARCH SERVICES WERE INDISPENSIBLE TO THEIR IMMEDIATE PURPOSES. WE CANNOT FAIL TO PROTECT THE BASIC EDUCATIONAL RESOURCES OF OUR INSTITUTIONS OF HIGHER LEARNING FROM EXTENSIVE INTERNAL DECIMATION OF THIS TYPE. WHENEVER PLANS APPEAR WHICH WOULD REMOVE AN OUTSTANDING PROFESSOR FROM THE CLASSROOM AND SEMINAR TABLE, WE HAVE AN OBLIGATION

TO URGE A LONG LOOK AT WHETHER THE RESEARCH RESULTS WOULD WEIGH AS
HEAVILY IN THE SCALES OF POSTERITY AS THE PH.D. STUDENTS HE WOULD TRAIN
AS A FACULTY MEMBER AND WHO WOULD CARRY HIS THUS MULTIPLIED SKILL AND
INSIGHT INTO THE FUTURE.

IX. SUPPLEMENTARY STAFF REMUNERATION DERIVING FROM SPONSORED RESEARCH.

A WHOLE GALAXY OF OTHER PROBLEMS ARISE WITHIN OUR UNIVERSITIES IN ASSOCIATION WITH THE USE OF SPONSORED RESEARCH FUNDS. BECAUSE IT HAS BEEN A MATTER OF PARTICULAR CONCERN AT MY OWN INSTITUTION, I WOULD LIKE, IN CONCLUSION, TO REPORT ON ONE MORE. PRESENT UNIVERSITY OF NEBRASKA POLICY PROVIDES THAT NO SUPPLEMENTARY SALARY WILL BE PAID TO MEMBERS OF THE FACULTY ON FULL-TIME DUTY FROM SPONSORED RESEARCH FUNDS DURING THE NINE MONTHS OF THE REGULAR ACADEMIC YEAR. SUCH STAFF MEMBERS MAY, HOWEVER, BE PERMITTED TO RECEIVE SALARY FOR TWO SUMMER MONTHS IN AN AMOUNT NOT TO EXCEED TWO-NINTHS OF THEIR REGULAR NINE MONTHS COMPENSATION.

SOME UNIVERSITIES NOW DISTINCTLY IN THE MINORITY, HAVE ADOPTED PROCEDURES PERMITTING THEIR STAFF MEMBERS TO RECEIVE SUPPLEMENTAL PAYMENTS IN ADDITION TO THEIR REGULAR ACADEMIC SALARIES DURING THE SEPTEMBER TO JUNE PERIOD FROM OUTSIDE GRANTS OR CONTRACTS UNDER THE INSTITUTION'S JURISDICTION. A NUMBER OF GOVERNMENT AGENCIES AND INDUSTRIES ARE WILLING TO SIGN AGREEMENTS WHICH PERMIT SUCH PRACTICE. BONUS PAYMENTS OF THIS TYPE, WHERE PERMITTED, USUALLY AMOUNT TO APPROXIMATELY 25% OF REGULAR MONTHLY SALARY PAYMENTS, AND THE PRESSURES FOR SO DOING HAVE BEEN PARTICULARLY STRONG IN THE ENGINEERING AREAS. TULANE AND THE UNIVERSITIES

OF WASHINGTON AND MICHIGAN ARE EXAMPLES OF INSTITUTIONS INVOLVED IN SUCH ARRANGEMENTS. THERE ARE A NUMBER OF ARGUMENTS FOR AND AGAINST THE PROCEDURE, SOME OF THE MORE IMPORTANT OF WHICH ARE OUTLINED IN THE FOLLOWING SUMMARY:

FOR

1. IT IS COMMONLY ARGUED THAT SINCE UNIVERSITY STAFF PEOPLE ARE GENERALLY UNDERPAID, ANY LEGITIMATE MEANS FOR SUPPLEMENTING THEIR INCOME WHILE THEY ARE ENGAGED IN DUTIES ESSENTIALLY BASIC TO THEIR JOBS SHOULD BE FOSTERED AND ENCOURAGED. UNIVERSITIES GENERALLY DO PERMIT STAFF MEMBERS TO ENGAGE IN CONSULTING WORK, TEXTBOOK WRITING AND EXTENSION TEACHING FOR FINANCIAL GAIN, EVEN WHILE HOLDING 100% TIME APPOINTMENTS. WHY, THEREFORE, SHOULDN'T THEY BE ALLOWED EXTRA COMPENSATION, WHERE POSSIBLE, FOR RESEARCH ACTIVITY WHICH MAY WELL BE EVEN MORE INTIMATELY A PART OF THEIR FUNDAMENTAL OBLIGATIONS.

2. SINCE A NUMBER OF MAJOR INSTITUTIONS ARE PERMITTING THIS FORM OF SALARY BONUS, THOSE UNIVERSITIES WHICH DO NOT ARE PUT AT A SERIOUS DISADVANTAGE IN THE PRESENT ACUTE COMPETITION FOR FACULTY PERSONNEL. THAT IS TO SAY, THAT IF A FACULTY MEMBER IS NOT PERMITTED TO RECEIVE A 25% SALARY BONUS FROM HIS CONTRACT AT THE INSTITUTION WHERE HE IS WORKING, THERE WILL BE STRONG ECONOMIC INCENTIVE FOR HIS MOVING TO AN INSTITUTION WHERE HE CAN.

AGAINST

1. TO PERMIT THIS FORM OF EXTRA COMPENSATION CAN EFFECTIVELY BE ARGUED TO REPRESENT INCONSISTENT THINKING WHEN ONE CONSIDERS THE

FUNDAMENTAL JOB OF A FACULTY MEMBER, I.E.:

- (A) RESEARCH IS ACCEPTED AS BEING ONE OF THE BASIC ACTIVITIES EXPECTED OF AN ACADEMIC STAFF MEMBER;
- (B) SPONSORED RESEARCH FUNDS SHOULD BE ACCEPTED FROM GOVERNMENT AGENCIES AND/OR INDUSTRIAL GROUPS ONLY IF THEY MEET THE TEST OF BEING IN SUPPORT OF RESEARCH THAT THE STAFF MEMBER GENUINELY WISHES TO UNDERTAKE IRRESPECTIVE OF THE AVAILABILITY OF OUTSIDE MONEY;
- (C) THEREFORE, IF RESEARCH IS AN EXPECTED PART OF A FACULTY MEMBER'S TOTAL OBLIGATION, AND IF THE STAFF MEMBER IS FORTUNATE ENOUGH TO FIND THE FINANCIAL SUPPORT FROM OUTSIDE THAT WILL PERMIT HIM TO DO THE INVESTIGATIVE WORK HE PERSONALLY WANTS TO DO, IT SEEMS LEGITIMATE TO ASK WHY HE SHOULD EXPECT BONUS COMPENSATION FROM HIS CONTRACT FOR DOING IT. THE FINANCIAL REWARD FOR DOING GOOD RESEARCH, WHICH IS ONE PHASE OF HIS EXPECTED COMMITMENT TO THE UNIVERSITY, SHOULD APPEAR IN THE FORM OF REGULAR SALARY ADVANCES FROM THE SUBSIDY FUNDS AVAILABLE TO HIS INSTITUTION.

2. THE PRACTICE OF PERMITTING EXTRA SALARY COMPENSATION FOR THOSE PARTICULAR KINDS OF RESEARCH THAT THROUGH FORTUITOUS CIRCUMSTANCE ARE ABLE TO PROVIDE IT, PLACES AN UNHEALTHY MONETARY LURE BEFORE THE STAFF WHICH MAY WELL RESULT IN SPECIFIC RESEARCH PROJECTS BEING SELECTED FOR REASONS OF ECONOMIC REWARD RATHER THAN, AS SHOULD BE THE CASE, ON THE BASIS OF INTRINSIC INTELLECTUAL OR ACADEMIC MERIT. THIS SORT OF FINANCIALLY "DIRECTED" RESEARCH CAN BE A DECIDEDLY UNDESIRABLE INFLUENCE IN

THE UNIVERSITY COMMUNITY, NOT ONLY FOR THE STAFF MEMBERS THEMSELVES, BUT FOR THE GRADUATE STUDENTS WORKING WITH THEM.

3. TO HAVE SOME SELECTED INDIVIDUALS RECEIVING BONUS PAYMENTS FOR THEIR RESEARCH WHILE MOST MEMBERS OF THE STAFF WILL NOT BE SO FAVORED, WILL LEAD TO FACULTY MORALE PROBLEMS GENERALLY.

4. EXTRA COMPENSATION WILL INCREASE THE SENSE OF OBLIGATION OF A STAFF MEMBER TO AN OUTSIDE AGENCY, AND IN EFFECT PUT HIM IN A POSITION OF SIMULTANEOUSLY WORKING DIRECTLY FOR COMPENSATION FROM TWO EMPLOYERS. THIS INTENSIFIED DIVIDED ALLEGIANCE BETWEEN THE UNIVERSITY AND AN OUTSIDE AGENCY, WHICH MAY HAVE QUITE DIFFERENT OBJECTIVES, CAN HARDLY BE ARGUED TO BE SOUND ACADEMIC MANAGEMENT.

POSTSCRIPT

UPON RE-READING THE MANUSCRIPT OF THIS REPORT ONE CONCLUSION STRUCK ME AS INESCAPABLE. UNIVERSITIES HAVE NO WELL-MARKED, BRIGHTLY-ILLUMINATED HIGHROAD TO THE RESOLUTION OF GRADUATE EDUCATION PROBLEMS. THE ROUTE, AS IT HAS BEEN AND PERHAPS SHALL ALWAYS BE, IS STILL UNDER CONSTRUCTION. WE MUST HAVE FAITH, HOWEVER, THAT NO MATTER HOW MANY TIMES WE ARE LED OFF ONTO BUMPY, WINDING DETOURS, WE SHALL SOMEHOW MANAGE TO FIND OUR WAY BACK TO THE MAIN THOROUGHFARE. DIRECTION WILL ALWAYS BE MORE SIGNIFICANT THAN COMFORT OR SPEED.

I WISH ALSO TO ACKNOWLEDGE HERE, WITH HUMBLE THANKS, THE CARNEGIE CORPORATION'S KIND INVITATION TO UNDERTAKE THIS APPRAISAL OF GRADUATE EDUCATION; AND THE GENEROSITY OF THE UNIVERSITY OF NEBRASKA IN PERMITTING ME TO BE ABSENT FROM THE CAMPUS DURING MY FIRST YEAR IN OFFICE. IT IS MY HOPE THAT THE ABRASIVE EFFECT OF MY TOUR HAS RUBBED OFF, TO SOME EXTENT, ON THE PAGES OF THIS REPORT.

J.C.W.
LINCOLN, NEBR.
AUGUST, 1958

APPENDIX A
THE ITINERARY

I. FIRST TRIP, NOVEMBER 25 - DECEMBER 22, 1957:

1. UNIVERSITY OF UTAH, SALT LAKE CITY, NOVEMBER 26;
2. UNIVERSITY OF CALIFORNIA, BERKELEY, NOVEMBER 28-30;
3. UNIVERSITY OF CALIFORNIA, LOS ANGELES, DECEMBER 2-4;
4. CALIFORNIA INSTITUTE OF TECHNOLOGY, PASADENA, DECEMBER 5-7;
5. STANFORD UNIVERSITY, PALO ALTO, DECEMBER 9-11;
6. UNIVERSITY OF CALIFORNIA, BERKELEY, DECEMBER 12-14;
7. UNIVERSITY OF OREGON, EUGENE, DECEMBER 16;
8. UNIVERSITY OF WASHINGTON, SEATTLE, DECEMBER 17-18;
9. UNIVERSITY OF BRITISH COLUMBIA, VANCOUVER, DECEMBER 19.

II. SECOND TRIP, MARCH 29 - MAY 2, 1958:

1. UNIVERSITY OF TEXAS, AUSTIN, MARCH 31 - APRIL 1;
2. RICE INSTITUTE, HOUSTON, APRIL 2-3;
3. TULANE UNIVERSITY, NEW ORLEANS, APRIL 4-5;
4. INDIANA UNIVERSITY, BLOOMINGTON, APRIL 7-9;
5. UNIVERSITY OF TORONTO, TORONTO, APRIL 10-12;
6. CORNELL UNIVERSITY, ITHACA, APRIL 14-15;
7. MASSACHUSETTS INSTITUTE OF TECHNOLOGY, CAMBRIDGE, APRIL 16-17;
8. YALE UNIVERSITY, NEW HAVEN, APRIL 18-19;
9. COLUMBIA UNIVERSITY, NEW YORK, APRIL 22-23;
10. NEW YORK UNIVERSITY, NEW YORK, APRIL 24-25;
11. DUKE UNIVERSITY, DURHAM, APRIL 28-29;
12. UNIVERSITY OF NORTH CAROLINA, CHAPEL HILL, APRIL 30 - MAY 1.

APPENDIX B

PERSONS WITH WHOM PARTICULARLY VALUABLE

INDIVIDUAL CONFERENCES WERE HELD

I. FIRST TRIP

1. UNIVERSITY OF UTAH.
(A) A. RAY OLPIN, PRESIDENT; (B) HOMER DURHAM, ACADEMIC VICE PRESIDENT; (C) HENRY EYRING, GRADUATE DEAN; (D) ARMAND J. EARDLEY, MINES AND MINERAL INDUSTRIES DEAN; (E) CARL J. CHRISTENSEN, COORDINATOR OF RESEARCH; (F) WILLIAM J. BURKE, CHAIRMAN OF DEPARTMENT OF CHEMISTRY AND PROFESSOR.
2. UNIVERSITY OF CALIFORNIA AT LOS ANGELES.
(A) RAYMOND B. ALLEN, CHANCELLOR; (B) VERN O. KNUDSEN, GRADUATE DEAN; (C) GUSTAVE O. ARLT, ASSOCIATE GRADUATE DEAN; (D) LEO P. DELSASSO, ASSOCIATE GRADUATE DEAN; (E) JOSEPH F. ROSS, ASSOCIATE DEAN OF MEDICINE; (F) RALPH W. MCKEE, PROFESSOR, CHAIRMAN OF UNIVERSITY RESEARCH COMMITTEE; (G) LEE KINSEY, PROFESSOR, CHAIRMAN OF DEPARTMENT OF PHYSICS; (H) LOUIS B. SLICHTER, PROFESSOR, HEAD, INSTITUTE OF GEOPHYSICS; (I) HENRY BRUMAN, PROFESSOR, CHAIRMAN OF DEPARTMENT OF GEOGRAPHY; (J) ROBERT M. GLENDINNING, PROFESSOR, DEPARTMENT OF GEOGRAPHY.
3. CALIFORNIA INSTITUTE OF TECHNOLOGY.
(A) F. BOHNENBLUST, DEAN OF GRADUATE STUDIES; (B) E. C. WATSON, DEAN OF FACULTIES; (C) FREDERICK C. LINDVALL, PROFESSOR, CHAIRMAN, DIVISION OF ENGINEERING; (D) ROBERT P. SHARP, PROFESSOR, CHAIRMAN, DIVISION OF GEOLOGICAL SCIENCES; (E) HALLETT D. SMITH, PROFESSOR, CHAIRMAN, DIVISION OF THE HUMANITIES.
4. STANFORD UNIVERSITY.
(A) J. E. WALLACE STERLING, PRESIDENT; (B) FREDERICK E. TERMAN, PROVOST; (C) WILLIAM STEERE, GRADUATE DEAN; (D) M. K. BENNETT, PROFESSOR, DIRECTOR, FOOD RESEARCH INSTITUTE; (E) KARL BRANDT, PROFESSOR, ASSOCIATE DIRECTOR, FOOD RESEARCH INSTITUTE; (F) EDWARD SCOLES, CONTRACT ADMINISTRATOR; (G) F. V. L. PINDAR, ASSOCIATE DIRECTOR, HANSEN LABORATORIES OF PHYSICS; (H) WILLIAM KIRK, HANSEN LABORATORIES STAFF; (I) WILLIAM H. COWLEY, PROFESSOR, HIGHER EDUCATION.
5. UNIVERSITY OF CALIFORNIA (BERKELEY).
(A) SANFORD A. MOSK, ASSOCIATE DEAN OF GRADUATE DIVISION; (B) JAMES M. CLINE, ASSOCIATE DEAN OF GRADUATE DIVISION; (C) LINCOLN CONSTANCE, DEAN OF COLLEGE OF LETTERS AND SCIENCE; (D) ROBERT BRODE, PROFESSOR, DEPARTMENT OF PHYSICS, CHAIRMAN OF UNIVERSITY EDUCATIONAL POLICY COMMITTEE; (E) T. R. MCCONNELL, PROFESSOR, HIGHER EDUCATION; (F) RUSSELL W. BARTHELL, ASSISTANT TO THE PRESIDENT; (G) BORIS BRESLER,

ASSISTANT DEAN OF ENGINEERING, GRADUATE DIVISION; (H) C. WILLET ASLING, DEPARTMENT OF ANATOMY; (I) HARMER DAVIS, PROFESSOR, CIVIL ENGINEERING; (J) HARVEY E. WHITE, PROFESSOR, PHYSICS; (K) CARL O. SAVER, PROFESSOR, GEOGRAPHY; (L) JOHN LEIGHLY, PROFESSOR, GEOGRAPHY.

6. UNIVERSITY OF OREGON.

(A) O. MEREDITH WILSON, PRESIDENT; (B) RAYMOND T. ELLICKSON, ACTING GRADUATE DEAN; (C) ROBERT D. CLARK, DEAN OF COLLEGE OF LIBERAL ARTS; (D) CHARLES T. DUNCAN, DEAN OF SCHOOL OF JOURNALISM; (E) SAMUEL DICKEN, PROFESSOR, GEOGRAPHY.

7. UNIVERSITY OF WASHINGTON.

(A) HENRY SCHMITZ, PRESIDENT; (B) HENRY A. BURD, ACTING GRADUATE DEAN; (C) NELSON WAHLSTROM, COMPTROLLER; (D) LLOYD S. WOODBURN, DEAN OF ARTS AND SCIENCES; (E) GEORGE AAGARD, DEAN OF MEDICINE; (F) HAROLD E. WESSMAN, DEAN OF ENGINEERING; (G) DONALD HUDSON, PROFESSOR, CHAIRMAN, DEPARTMENT OF GEOGRAPHY.

8. UNIVERSITY OF BRITISH COLUMBIA.

(A) NORMAN MACKENZIE, PRESIDENT; (B) G. M. SHRUM, GRADUATE DEAN; (C) HENRY C. GUNNING, DEAN OF ENGINEERING AND APPLIED SCIENCE; (D) J. LEWIS ROBINSON, PROFESSOR, CHAIRMAN, DEPARTMENT OF GEOGRAPHY.

EN ROUTE TO LINCOLN, SPENT AN AFTERNOON WITH PRESIDENT E. B. FRED AND GRADUATE DEAN CONRAD ELVEJEM AT THE UNIVERSITY OF WISCONSIN IN MADISON.

II. SECOND TRIP

1. UNIVERSITY OF TEXAS.

(A) LOGAN WILSON, PRESIDENT; (B) HARRY H. RANSOM, VICE PRESIDENT; (C) MELVIN A. CASBERG, VICE PRESIDENT FOR MEDICAL AFFAIRS; (D) W. GORDON WHALEY, GRADUATE DEAN; (E) J. ALTON BURDINE, ASSOCIATE GRADUATE DEAN AND DEAN OF ARTS AND SCIENCES; (F) FRANK HARRISON, MEDICINE AND MEMBER OF GRADUATE COUNCIL; (G) DAN STANISLAWSKI, PROFESSOR, GEOGRAPHY.

2. RICE INSTITUTE.

(A) W. V. HOUSTON, PRESIDENT; (B) G. H. RICHTER, DEAN OF FACULTIES; (C) W. D. MILLIGAN, PROFESSOR, CHEMISTRY; (D) FRANK VANDIVER, PROFESSOR, HISTORY; (E) WILLIAM H. MASTERSON, PROFESSOR, HISTORY; (F) CHARLES SQUIRES, PROFESSOR, PHYSICS.

3. TULANE UNIVERSITY.

(A) FRED COLE, ACADEMIC VICE PRESIDENT; (B) R. M. LUMIANSKY, GRADUATE DEAN; (C) RAY FORRESTER, DEAN OF LAW; (D) F. E. LAVOILETTE, PROFESSOR, SOCIOLOGY.

4. INDIANA UNIVERSITY.

(A) HERMAN WELLS, PRESIDENT; (B) HERMAN T. BRISCOE, ACADEMIC VICE PRESIDENT; (C) RALPH CLELAND, GRADUATE DEAN; (D) RALPH COLLINS, ASSOCIATE DEAN OF FACULTIES; (E) H. T. BATCHELDER, ASSOCIATE DEAN OF EDUCATION FOR GRADUATE AFFAIRS; (F) ARTHUR M. WEIMER, DEAN OF SCHOOL OF BUSINESS; (G) FRANK T. GUCKER, DEAN OF ARTS AND SCIENCES; (H) DAVID G. FREY, PROFESSOR, ZOOLOGY; (I) GEORGE KIMBLE, PROFESSOR, GEOGRAPHY; (J) FRAZER HART, PROFESSOR, GEOGRAPHY.

5. UNIVERSITY OF TORONTO.

(A) M. ST.A. WOODSIDE, ACTING PRESIDENT; (B) A. R. GORDON, DEAN OF GRADUATE STUDIES; (C) ROGER MYERS, ASSOCIATE DEAN OF GRADUATE STUDIES; (D) A. S. P. WOODHOUSE, PROFESSOR, ENGLISH; (E) VINCENT BLADEN, PROFESSOR, POLITICAL ECONOMY; (F) FULTON ANDERSON, PROFESSOR, PHILOSOPHY.

6. CORNELL UNIVERSITY.

(A) DEANE W. MALOTT, PRESIDENT; (B) SANFORD S. ATWOOD, PROVOST; (C) C. A. HANSON, DEAN OF UNIVERSITY FACULTY; (D) JOHN W. MCCONNELL, GRADUATE DEAN; (E) FRANCES E. MINEKA, DEAN OF ARTS AND SCIENCES; (F) THEODORE P. WRIGHT, VICE PRESIDENT FOR RESEARCH; (G) JOHN W. HASTIE, COORDINATOR OF RESEARCH.

7. MASSACHUSETTS INSTITUTE OF TECHNOLOGY.

(A) CARL F. FLOE, ADMINISTRATIVE VICE CHANCELLOR; (B) GENERAL JAMES MCCORMACK, VICE PRESIDENT FOR INDUSTRIAL AND GOVERNMENTAL RELATIONS; (C) JOHN T. NORTON, DEAN OF FACULTY; (D) ERNEST H. HUNTRESS, SECRETARY OF THE GRADUATE SCHOOL.

WHILE IN CAMBRIDGE, SPENT AN EVENING WITH GRADUATE DEAN JOHN P. ELDER OF HARVARD UNIVERSITY.

8. YALE UNIVERSITY.

(A) HARTLEY SIMPSON, GRADUATE DEAN; (B) DANA YOUNG, DEAN OF ENGINEERING; (C) THOMAS R. FORBES, ASSISTANT DEAN OF MEDICINE; (D) STEPHEN B. JONES, PROFESSOR, GEOGRAPHY.

9. COLUMBIA UNIVERSITY.

(A) GRAYSON KIRK, PRESIDENT; (B) JACQUES BARZUN, GRADUATE DEAN; (C) THOMAS YERZLEY, DIRECTOR OF GOVERNMENTAL RESEARCH; (D) JOHN R. DUNNING, DEAN OF ENGINEERING; (E) ROBERT WEBB, PROFESSOR, HISTORY, CHAIRMAN OF SOCIAL SCIENCE RESEARCH COUNCIL; (F) LAWTON PECKHAM, PROFESSOR, CHAIRMAN OF HUMANITIES RESEARCH COUNCIL.

10. NEW YORK UNIVERSITY.

(A) HAROLD STOKE, GRADUATE DEAN; (B) SIDNEY ROTH, COORDINATOR OF RESEARCH.

11. DUKE UNIVERSITY.

(A) ARTHUR H. EDENS, PRESIDENT; (B) P. M. GROSS, VICE PRESIDENT;
(C) MARCUS E. HOBBS, GRADUATE DEAN; (D) J. H. SAYLOR, PROFESSOR,
CHAIRMAN, DEPARTMENT OF CHEMISTRY; (E) JOHN T. LANNING, PROFESSOR,
HISTORY, SECRETARY OF UNIVERSITY RESEARCH COUNCIL; (F) CHARLES E.
WARD, PROFESSOR, ENGLISH.

HAD AN OPPORTUNITY TO VISIT FOR AN EVENING WITH GRADUATE DEAN HUGH TAYLOR
OF PRINCETON UNIVERSITY WHILE WE WERE BOTH VISITORS IN DURHAM.

12. UNIVERSITY OF NORTH CAROLINA.

(A) WILLIAM FRIDAY, PRESIDENT; (B) WILLIAM M. WHYBURN, VICE PRESIDENT;
(C) W. B. AYCOCK, CHANCELLOR; (D) JAMES GODFREY, DEAN OF FACULTIES;
(E) ALEXANDER HEARD, GRADUATE DEAN.